2007 Global HR Institute Forum

The Bridging Role for the Future, Human Resource Development

Edited by Eunsang Cho

Korea Research Institute for Vocational Education & Training

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FOREWORD

It is with great pleasure that we invite you to the "2007 Global Human Resources Institute Forum" in Seoul. The Forum will be held under the theme: *"The Bridging Role for the Future, Human Resources Development,"* opening a venue for exchange of in-depth information and discussions on the future of the HRD field.

Korea Research Institute for Vocational Education and Training(KRIVET) was established in 1997 with support from the Korean government to conduct research on technical and vocational education and training and human resources development(HRD) as well as to support government policies for the purpose of developing vocational competencies through technical and vocational education and training(TVET) as part of lifelong learning.

The 2007 Global HR Institute Forum serves as a meeting place for HRD and TVET related government ministries and agencies, research institutions and vocational education and training institutes from around the world, providing an opportunity for sharing progresses in HRD and vocational education and training by means of facilitating information exchange and learning regarding policies, research and information in HRD and TVET. Mutual benefit through learning can be achieved through promotion of joint research with inter-agencies on critical issues related to the HRD. The Forum will also open up official and unofficial channels for exchange of research achievement among members.

We look forward to having exciting and inspiring discussions, and invite you to share your expertise and insights during this significant international forum.

Dr. Won-Duck Lee

President, KRIVET

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PART I

HRD Trends in Advanced Countries

Chapter 1

Vocational education and training policies in EU competitor countries

Joachim Dittrich
(University of Bremen)

Ⅰ. Introducton

ITB(Institute Technology and Education, University of Bremen) has been commissioned by CEDEFOP(the European Centre for the Development of Vocational Education and Training) to undertake a study on the Vocational Education and Training(VET) policies of eight countries that are considered as economic competitors of the European Member States and the European Union. These eight countries are: Australia, Canada, the People's Republic of China, India, Japan, Republic of Korea, Russia, and USA.

The overall aim of the study is to provide information about the developments in both the VET systems and the VET policies in these countries and compare these with the developments in VET and VET policies in Europe. The concrete objectives of the study are to analyse the main VET policies in these countries with a focus on strategic development and to examine in detail developments in three selected policy areas such as "image and attractiveness of VET; "Financing of VET", and "Identification and anticipation of skill needs".

The study is carried out by researchers from ITB and the German Institute for International Educational Research(DIPF, Germany) with support of UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training. Country experts are involved in the study in order to help to identify the relevant and up-to-date data sources for the different issues addressed in this study and to help to identify the main trends and developments in VET and VET policies in the respective country.

At this point of time the study is still under preparation and some of the country data is still not available. Therefore the data and findings presented here must be considered as being preliminary, especially because they have not yet been reviewed by the country experts. The reader of this paper should also be aware, that the presentation of such a complex theme in a short paper necessarily will lead to a somewhat coarse description and that for the sake of readability references have to be omitted. To be sure to interpret things correctly, she/he should have already some knowledge of the countries in question, or, even better, wait until the final report is published.

In the next section of this paper some introductory information about the VET systems and other framework data in the countries in question will be given, including some information on the European situation. This is because at least some rudimentary information on the VET systems and the economic situation of countries is necessary to interpret the data and findings of the following section, which gives some selected information with respect to national VET policies.

Ⅱ. Background information and history of TVET systems

When analysing VET it is also important to be aware of the dimensions we are talking about. This means on the one hand being aware of the size of the underlying economies, on the other hand it is essential to recognise which grade of generalisation is applied to the analysis. <Table 1-1> gives some general structural information of the countries/regions involved. Figures are for the year 2006, are partially estimates, and rounded.

The countries in question are divided into two groups of four: Australia, Canada, Japan, US in one group, China, India, Korea, Russia in the other. This grouping was prescribed by CEDEFOP, but can get its motivation also in the height of gross national income(GNI) per head and year, as can be seen from <table 1-1>, or by the grade of conversion into a service economy.

<Table 1-1> 2006 Countries' Population and Gross National Income(GNI)

Country/Region	Population [in Millions]	GNI per head per year [in US$]
Australia	20,5	35.990
Canada	32,6	36.170
China	1.312	2.010
India	1.110	820
Japan	127,6	38.410
Korea	48,4	17.690
Russia	142,4	5780
USA	299	44.970
Europe[1]	493	
Luxemburg	0,46	76.040
Germany	82,3	35.200
Bulgaria	7,7	3.990

Source: Worldbank Quick Reference Tables, retrieved 10 October 2007
[1] Source: Eurostat

1. European Union

Currently, in the year 2007, the European Union has 27 independent member countries. Each of these countries has its own VET system and its own VET policy. In the area of education the EU's role is limited to supporting national governments. The European Commission, which can be regarded as some kind of "European government", due to the principle of subsidiarity, does not have any competences in the field of education and training.

Nevertheless education and training has become an important field of activity for achieving the so-called "Lisbon Goals", i.e. [European Council 2000] for becoming the most competitive and dynamic knowledge-based economy in the world by the year 2010.

In the area of higher education the Ministers for Education of the European countries agreed already in 1999 to create a common European Higher Education Area via the so-called Bologna Process[European Ministers of Education 1999]. For Vocational Education and Training the "Copenhagen Declaration" of the European Ministers of Vocational Education and Training, and the European Commission on enhanced European cooperation in vocational education and

training was adopted in 2002[European Ministers of Vocational Education and Training 2002]. At the time being the creation of a European Qualification Framework(EQF)[1] as well as a Credit Transfer System for vocational education and training in Europe(called ECVET)[2] is discussed.

The development of such schemes for independent countries with different VET systems, VET histories, and economies like they can be found throughout Europe is not a trivial task and is still ongoing.

2. Australia, Canada, Japan, and US

Australia and Canada can be assumed to have some similarities in their general economic structure. Both used to have (and still are biased towards) an economic basis founded on the exploitation of natural resources and agricultural production. Both countries share the attempts to overcome these deficiencies during the last decade. In the case of Canada, this lead to an expansion of innovative sectors, like biotechnology and ICT.

Japan on the other hand is characterised by a scarcity of natural resources; the economy used to have a strong manufacturing basis with special strengths in electronics, robotics, semiconductors and emerging nano-technologies. The U.S., eventually, face Health Services and Computer and data processing services as the fastest growing sectors. Common to all countries is a high share of services as part of GDP(U.S.A. 73%, Australia 75%, Canada 69%) as well as of employment. While US, Australia's and Canada's economies grew steadily since the mid-1990, Japan's recovery from the "Bubble Burst" was not before the Millennium turn and displays a moderate growth (between 0,6 and 2%) since 2000. All countries have comparatively low unemployment rates between about 4%(Japan, Australia and the U.S.) and 6.3% in Canada (in 2006).

All countries share pluralist (federal) education systems that can differ considerably between

[1] For more information see http://ec.europa.eu/education/policies/educ/eqf/index_en.html
[2] For more information see http://ec.europa.eu/education/policies/2010/doc/ecvt2005_en.pdf

states or prefectures. Since the 1970s there was a growing awareness of the need to adapt the prevailing VET systems or policies to the changes in industry. In the U.S. these changing requirements were met through the strong link between local colleges(Community Colleges) and the local industries. Canadian government realised that the traditional source of skilled work, immigration, did not serve the changing needs anymore and enacted the National Training Act (in 1982) which was complemented by the Canadian Job Strategy. Both measures show that government wants to link VET and the creation of jobs. Australia similarly reformed the VET system since the mid-1980s as there was clear evidence that Australia could not keep up with the international trends and challenges to adopt innovative technologies and apply advanced work practices. In Japan declining in-company VET lead to the need to continuously adapt school-based VET provision to the needs of the economy by means of enhancing communication between stakeholders in VET.

Major changes occurring in all four countries are the attempts to support the skilled work demands of small and medium-sized enterprises through various programs(e.g. the Manufacturing Extension Partnership Programme, MEP, in the U.S. or the prefectural technology transfer centres for small and medium-sized enterprises in Japan). These changes indicate that VET is provided to persons at all ages and different stages in their careers – thus a distinction between initial and continuing training is difficult to maintain.

Countries differ with regard to the organisation and institutional framework of the VET system. Where Japan still can be characterised as a highly centralised country (notwithstanding the fact that prefectures and municipalities have an important role in the provision of education), Canada, the USA and Australia have a ‘layered structure’ in the sense that it concerns federal states (or provinces or territories) with a certain autonomy with regard to education and educational policy making. This does not mean that the federal government does not have a role in developing VET systems and VET policies. Certainly in Australia, the federal government appears to have taken over a leading role in this area during recent years (though the actual implementation of federal policies is a matter of the individual states and territories). In Canada and the USA this seems to be less the case; the consequence is that a substantial part of policy development takes place at the level of states or even lower administrative levels.

A strict distinction between initial VET(IVET) and continuing VET(CVET) appears no longer to exist (probably with the exception of Japan), in the sense that both young people and adults (be they employed or unemployed/inactive) in principle (can) use the same VET offers and providers. This does not mean, however, that there are more or less specialised VET providers aiming at particular groups of adults, e.g. providing (short) courses for enterprises/workers, providing labour market training for the unemployed, etc. The question is whether this indicates a distinction between IVET and CVET or whether this indicates a distinction between publicly provided VET and privately provided VET, with private providers specialising to serve particular niches in the market. Australia is the only country that has introduced a qualifications framework.

Employer and social partner involvement is an important issue in all four countries. Attempts to increase social partner involvement in VET policy development (e.g.: developing the national public IVET system) in Japan have thus far encountered a lack of interest from the side of employers (which can be partly explained by the specific labour market structure in Japan). In Canada, the USA and Australia, social partner involvement can differ between states/provinces/territories.

3. China, India, Korea, Russia

With China, India and Russia three of the largest emerging economies are included into the analyses. The average labour participation rate(KILM 1, Key Indicators of the Labour Market according to ILO) is about 82% in Russia and 75% in Korea – with a moderate gender bias in favour of male participation in Russia and a more clear-cut gender bias in Korea). For India and China no reliable data are available, because of pronounced regional differences(urban–rural divide). These imbalances, however, are true for all four countries, and they also apply for national unemployment rates, e.g. Russia 6,6%(2006); Korea 3,7%(2005), China 4,2%(2004).

The latter Chinese figure covers only official urban unemployed, no rural unemployment and no unregistered urban unemployment; including these figures would lead to an estimate of 10% or skyrocket to an estimated 23% of the total labour force (according to RAND Corporation).

Similarly, India's unemployment figures are affected by regional imbalances(a national average is given: 7,8% in 2006(est.) with a considerably higher figure for youth: 13%).

India and China share a high growth of GDP(India in 2005/2006 of 9%, China an annual average of 8–10% since a decade). Russian GDP is growing annually with an average of 6,5% (since the financial crisis in 1998). Korea will reach an estimated GDP growth of 4.5% in 2007. While major parts of the Russian GDP growth are owed to the primary sectors(oil, gas), in India and particularly in China the basis for growth are manufacturing industries, machinery, electronics and ICT, and telecommunication. Trends in science and technology policy and public spending in China indicate that biotechnology will be an upcoming industry in the future. In the case of India the electronics and software industry is expected to consolidate, which will create a demand pull for special skills needed in these industries. Korea's current strengths in the electronics, computer and telecommunication industries with a particular emphasis on semi-conductors and flat screen displays will prevail and therefore generate a skill demand for workers and technicians in these fields. Russia, eventually, is reinforcing its manufacturing industry, but in the mid-term (5 years) no major upswing in this sector is likely to come.

While in China an upgrading of VET can be observed since the reforms for opening and liberalising the Chinese economy, Russia suffers from the Soviet legacy, particularly from the centrally planned distribution of manpower. The privatization of the Russian economy and companies led to the fact that the state had to take over VET institutions and their financing (from formerly state-owned enterprises), which led to a neglect of the VET system. India historically has developed a system of "Polytechnics" where school-based courses of 3-year duration are offered. Korea, eventually, is characterised by a separation of vocational education and vocational training. The former is provided by schools and colleges, the latter by public or private institutes. Recent economic changes are pushing the restructuring in vocational education and training.

The efforts made in all countries have in common that they want to establish stronger links between the economy and vocational education and training. India for example has embedded this into the target of 25% of students at secondary level shall enrol in vocational branches,

China 50% –figures not yet reached. In line with this is the decreasing number of Korean high school graduates who take the vocational track at secondary level.

All countries (with exception Korea) have a 'layered' VET system, in the sense that responsibilities for VET, in particular for IVET, are divided between two or three administrative levels. In India and China, these are respectively the central and state government(s) and the central government and the regional authorities. In Russia responsibilities for IVET are divided between central government, regional executive bodies and local authorities. Nevertheless, the central government takes a leading role where VET policy development is concerned. However, the actual implementation of these policies can differ between states/regions. A specific characteristic of the IVET system (that is IVET within the formal education system) in these three countries is that, although the Ministries of education(in the case of India the Ministry of Human Resource Development) has the 'lead' in the policy development, from an institutional perspective a multitude of other Ministries or Departments is involved in IVET, given that they are responsible for specific IVET institutions that fall within their domain (e.g. agriculture, health, fishery, etc.). For India the situation is even more complex given the relatively large involvement of NGOs in the area of developing various IVET provisions. In China and Russia there are concrete plans to change this situation either by reducing the number of ministries/departments or by bringing all IVET provision under the aegis of the Ministry of Education. Another specific characteristic of the IVET system in these three countries and in Korea is the distinction between vocational education and vocational training. In China and India this is mainly linked to the question which Ministry bears the prime responsibility. For vocational education that is the Ministry of Education or the Ministry of Human Resource Development, whereas for vocational training it is the Ministry of Labour and Social Security(China) and the Ministry of Labour and Employment(India). In the case of Russia it is more a distinction between a formal IVET system and a 'second IVET system', which emerged from the beginning of the 1990s onwards. The latter is a non-formal system in which (large) enterprises opt for organising their own vocational education and training through on-the-job training and internal IVET pathways (not least since they consider the state IVET offer as outdated and as having too low standards). In Korea vocational education is under the Ministry of Education while vocational training is under the Ministry of Labour.

In each of the three countries there is a tendency towards decentralisation, providing the regional level with more possibilities to develop IVET policies. In China, the central government has taken the official stance that it is impossible to develop and maintain one comprehensive system for the whole country, and that regions should have the possibility to adapt their VET system to the regional and local economic and labour market development. In Russia there are plans to transfer at least the responsibility for IVET institutions to the regional level. In addition to this, VET institutions in both China and Russia have a relatively high autonomy. In China VET institutions have in particular high autonomy in curricular matters and with the decentralisation this will further increase. In Russia VET institutions tended to have a rather large autonomy, but it has actually been decreased over the last years by an increase in regulations from the central level. In Korea decentralisation does not seem to play a role.

Involvement of the social partners and of enterprises in VET development is also an issue in each of the countries. Although in China input of the branches is part of the regular planning and development system, it is limited to the decision makers for the different branches (often from specific Ministries or Departments), which fall functionally under the central government. Their involvement covers the drafting of branch specific development plans and curricula and the design and implementation of branch relevant programmes and provisions. In Russia, thus far little progress has been made with increasing the involvement of the social partners, even though it has been an issue since the early 1990s. Recently some pilots started in this area (also in relation to developing IVET standards for particular occupational groups). Involvement of social partners is not very strong in Korea, but it exists. Their interest in VET is not very strong and their role in forming VET policy is still marginal. However, recently, there are initiatives, from the government side, to consolidate the cooperation among the three major social partners: the state, the labour, and the employers.

Ⅲ. National VET policies

National VET policies are crucial for the appropriateness of skill formation processes to the needs of production development of the society. Thus, the objectives targeted and the priorities favoured by policy are of great importance for the competitiveness of companies, sectors and

nations – not to forget the competitiveness of individuals on the labour markets. By considering other policy fields(employment, innovation policy, general education policy, social inclusion) and other VET actors/stakeholders a comprehensive picture of the current VET policy developments will be drawn, which serves as a basis for assessing the appropriateness of VET systems to emerging economic, technological and social challenges.

Though data on the recent policy actions are available, assessing the medium or long-termed consequences of these actions requires a sound knowledge of the contexts, which we attempt to acquire through the national experts.

In the following some brief hints on recent and actual policies are given. For more detailed information the reader is referred to the already mentioned final report.

1. Australia, Canada, Japan, and US

It will not be surprising that the main drivers behind VET policies and recent changes in VET policies are issues like globalisation, increasing international competitiveness, changing labour markets and economic structures (e.g. the shift towards a service and knowledge-based economy), rapid technological changes and the ageing population/work force. In that sense the overarching objectives of these policies are also quite similar:

I. developing a VET system for the 21st century,
II. making VET (more) responsive (both with regard to labour market needs and individual needs and preferences),
III. ensuring a highly skilled (and competitive) labour market,
IV. ensuring an inclusive VET system (with an emphasis on indigenous people in Australia and Canada),
V. improving quality and outcomes of the VET system and helping to solve skill shortages. In addition to this (especially Australia and the USA) policies are intended to develop a comprehensive VET system covering all levels(secondary, tertiary) and all pathways (school-based, apprenticeship training). Overall it can be said that VET policies are embedded in the broader context of policy development with regard to lifelong learning.

As said, Australia, Canada and the USA are federal states. Policy making does not only take place on the federal level, but also on the level of states/provinces/territories. The items mentioned in the listing above all concern federal policies. All in all, the federal government in Australia seems to have taken the lead in VET policy development. This seems to be less the case in the USA and Canada. For a full picture this might mean that also the lower administrative level needs to be taken into consideration which is not done in this paper due to space restrictions.

Not all policy initiatives mentioned above are exclusively focused on VET (e.g. human resources and social development Canada, American Competitiveness Initiative), but are never the less related to VET issues. This is apart from the issue of policies in related areas like employment/labour market, economic development and innovation (which however, often are also part of or related to the more general policies mentioned above). In that sense, VET policy development takes place in the wider context of policies aimed at economic and social development of countries.

The extent to which data are available about specific policy measures implemented in the context of the policies indicated above differs between countries and also depends on the 'relative newness' of the policies (e.g. for policies implemented last year it will be clear that it is to early to say much about progress made thus far). It also depends on the extent to which implementation of policies is monitored at national level. The final report will provide detailed insight in this issue.

2. China, India, Korea, and Russia

Notwithstanding the distinct differences (but also distinct similarities) between the economies of China, India and Russia, their VET policies share remarkable similarity in the overall objectives (though the terminology and concepts applied are different). These common themes are:

- Improvement of the match between IVET and the labour market, in particular the adaptation of VET systems and VET programmes in order to meet changing economic,

labour market and societal demands (and catering for demographic changes);

- Increasing the investment in IVET, not only by increasing the available state budgets for IVET but also through public-private partnerships, and increased involvement of enterprises, both in VET delivery and VET funding.

In Russia and India a common concern is the increasing youth unemployment, due to unqualified or not sufficient qualified labour market entry or to the fact that they enter the labor market with skills that are no longer in demand (e.g. declining sectors). India aims in this context at improved access to and increased participation rates in IVET (next to a better identification of marketable skills, better VET-industry linkages and an ongoing vocationalization of school curricula). In Russia the main concern is to overcome the disproportionalities between lower, medium and higher level vocational qualifications, e.g. by horizontal and vertical integration of IVET institutions (which is intended to further stimulate progression through the IVET system).

China's concern is to release the existing pressure on the academic labour market and the higher education institutions by trying to make vocational education paths more attractive. This includes the development of so-called "Higher Vocational Education" at higher education institutions including universities. The target is that by 2010 50% of the youth should choose a vocational track. With developing a "half work, half study" concept for vocational education youth are expected to acquire qualifications that are more relevant to the labour market than this has been the case in the past in order to provide the economy with skills and competences that are needed in view of the ongoing increase of sophistication of Chinese manufacturing products. The Chinese government supports this development with a somehow half-hearted increase in funding of VET and a considerable investment in augmenting the competences of VET teaching staff and the building-up of VET related research and development capacities at universities.

In each of the countries improvement of the human resources situation and further developing the competitiveness of the own economy in a globalising competition is one of the driving forces behind the changes in VET systems and VET policies.

Ⅳ. Conclusions

All countries considered seem to be aware of the paramount importance of vocational education and training for the development of their economies and societies. All of them (maybe Japan to a lesser extent) consider the involvement of the industry in VET as an important element for assuring that learners acquire relevant occupational competences and occupational identity. Differences exist in the approaches the countries have chosen motivated by their current economic, societal, political situation and by their education and training traditions, in the amount of energy they put in following the pathway, and in how far they have proceeded on the route.

In this paper it was only possible to draw a very rough picture of the analysis of EU competitor countries' VET policies, and for sake of readability references were almost completely omitted. Recommendations with relation to the European Union could not yet be presented. However, the study will be completed until end of the year 2007. Shortly afterwards, in case the client does not object, the study will be published containing in-depth analysis and references. Related information will be available on the website of ITB, www.itb.uni-bremen.de.

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EQF The European Qualifications Framework: a new way to understand qualifications across Europe. http://ec.europa.eu/education/policies/educ/eqf/index_en.html

Chapter 2

In-Company Training in Germany – Structure, Trends and Permeability between the Dual System of VET & the Higher Education System

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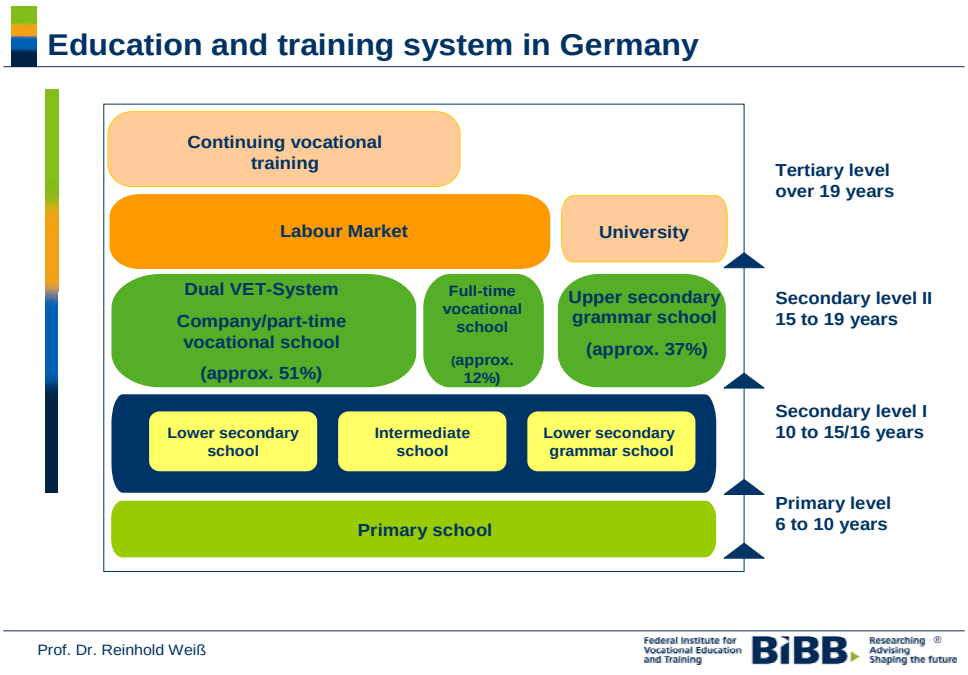
I. Transition from school to work: Dual system of vocational education and training

Vocational education and training in Germany takes its distinctive character from the dual system of vocational training. This, in our understanding, is one of the most important reasons for the economic success and the international competitiveness of the German economy. The transition of young people from the educational system into the labour market is well-paved and youth unemployment is fairly low, especially compared with school-focused systems.

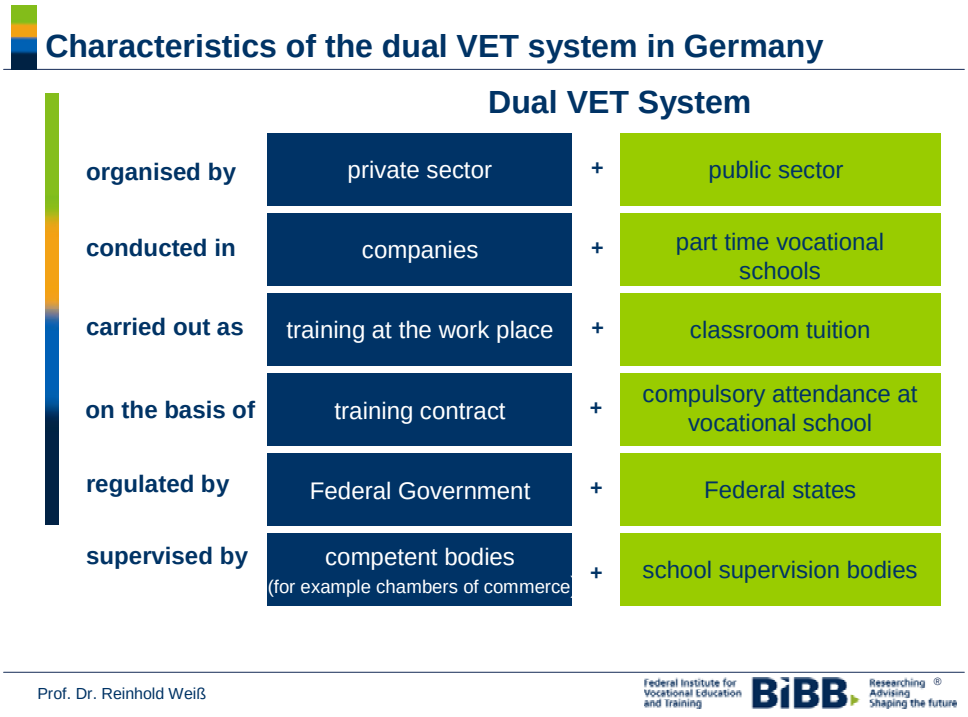
[Figure 2-1]



After completing school, approximately 51 per cent of the age-group move on to a vocational training program within the dual system. Taking into account those who first decide to attend a full-time vocational school or to finish the upper secondary grammar school and start their apprenticeship training later on, the percentage is higher still. Ultimately, about 60 per cent of every age cohort receives vocational training in the dual system of education and training or alternatively by attending full-time vocational schools. Of these two pathways of VET, training in the dual system is by far the most significant in terms of quantity.

The dual system of education and training is characterized by the linkage of in-company and in-school learning, of public and private responsibility. Apprentices have a work contract so that the dual system is part of the employment system. At the same time they attend part-time vocational training schools, so that the dual system is also part of the educational system. Enterprises and vocational schools provide training jointly, but the proportion of education and training time provided by the vocational school is considerably lower. Apprentices attend school for one or two days a week and get company training at work three or four days a week.

[Figure 2-2]



Vocational education and training in the dual system means that the enterprises are responsible for providing and funding training. However, enterprises are allowed to train young people only in the government-approved training occupations. The specification of binding training regulations ensures uniform national standards that do not depend on the requirements of the enterprise at any given time. Quality control over in-company training, that is, over the aptitude of the companies providing the training and of the company training personnel, is exercised by the competent bodies, for example the chambers of commerce or crafts.

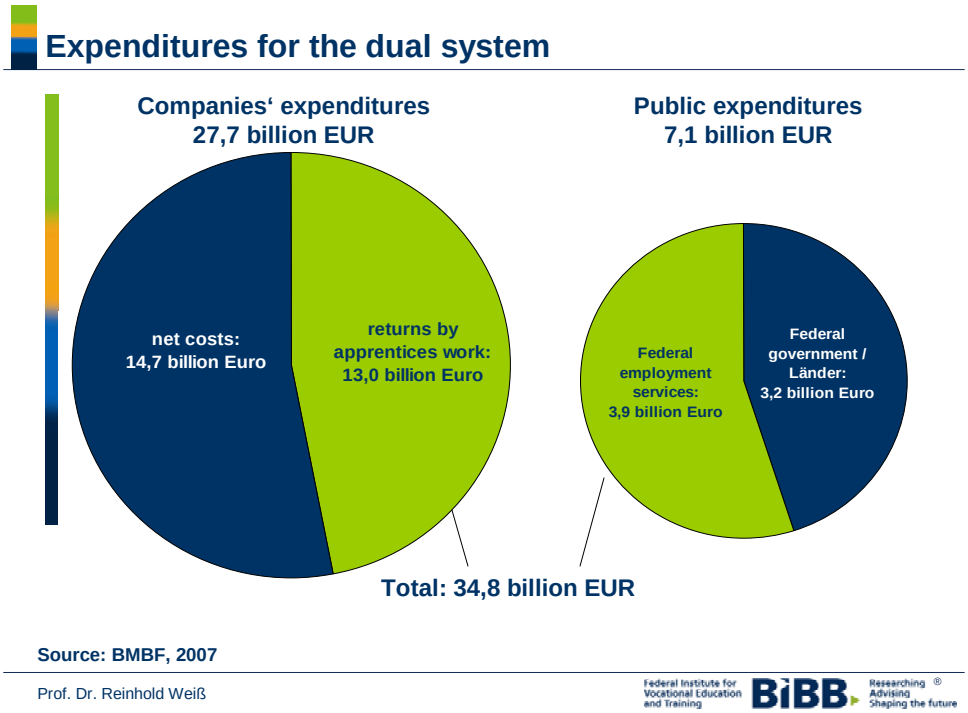
Currently, around 2 million companies – that is 24 per cent of all companies – engage in the dual system of VET and offer training. About the same number again would be entitled to provide initial vocational training, but decline to do so. And around half of companies are unable to provide initial training, because their profile does not meet the criteria or does not match with any recognized training occupations. Most of these are small companies with less than 10 employees.

A typical feature of the dual system of apprenticeship training is the principle of complete vocational training, which means training in a broad profile of professions. This is very typical and quite different from the tradition in other countries, for example the United Kingdom or the United States. At the moment we have training regulations for 350 different occupations. They describe a wide range of vocational tasks in different companies and are the basis for continuing training and mobility of the workforce. Each occupation is characterized by means of training standards. They are developed by the Federal Institute for Vocational Education and Training in cooperation with experts from the business field and the trade unions, and describe minimum requirements for company training. Training standards stipulate

- a designation of the training occupation,
- the duration of the training,
- the occupational profile,
- a framework curriculum,
- the examination requirements.

Apprentices get paid according to tariffs. These are agreed on in collective bargaining between trade unions and employer organizations. Apprenticeship salaries come up to around one third of the salaries paid for fully trained workers. They are the most important cost factor and contribute around 50 per cent to the total expenditure of companies on the dual system. The total amount invested by companies comes to EUR 27.7 billion per year. Considering the value of the apprentices' productive work, net costs have been calculated at EUR 14.7 billion.

[Figure 2-3]



Why are companies willing to invest this amount of money in general training, which is transferable to other sectors and other companies? The answer given by companies is, that

- trainees and employees meet companies' requirements,
- skilled employees are otherwise not available on the job market,
- it is a way of preventing personnel fluctuation,
- it is the best way to pick and choose the best employees, and a good way of avoiding wrong hiring decisions,
- they cut costs for staff which otherwise have to be hired by means of attractive salaries on

the job market,

- it enhances the company's reputation with customers, their own employees and in the local area,
- trained workers are the prerequisite for a productive workforce, for flexible work organization as well as for innovation; and last but not least
- they reduce personnel recruitment costs.

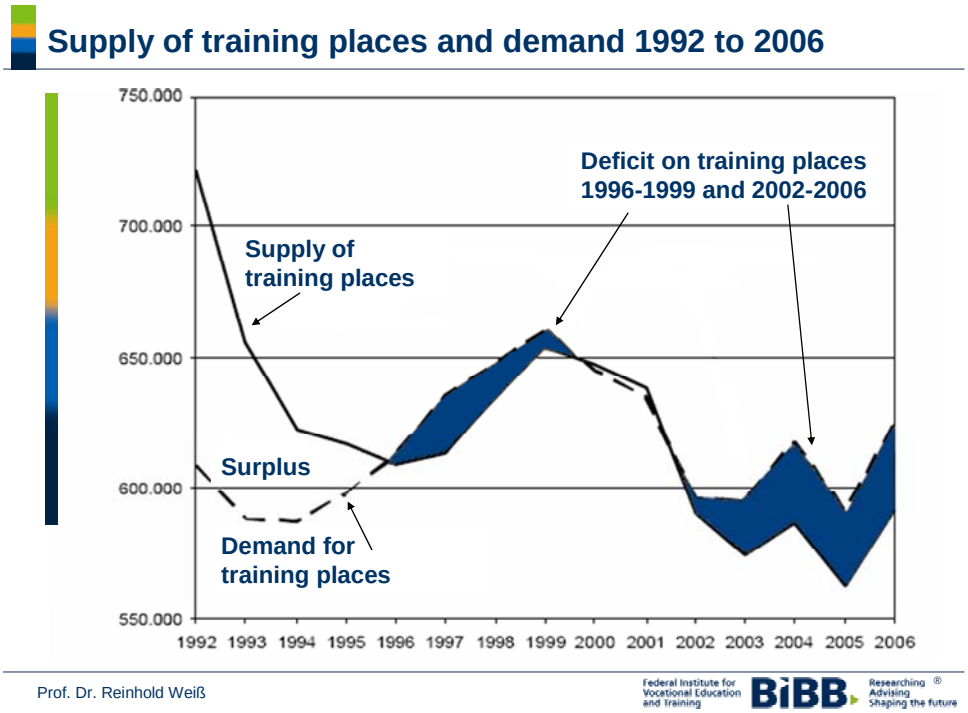
For the process of internalization of these benefits it is essential for apprentices to get a normal working contract after passing the final examination. This was the case in the past. During the last century the percentage of graduates getting a contract in their company after passing the final examination went down to about 55 per cent. As a consequence, the cost of training has become a problem and a subject of public discussion.

Ⅱ. Supply and demand for company training

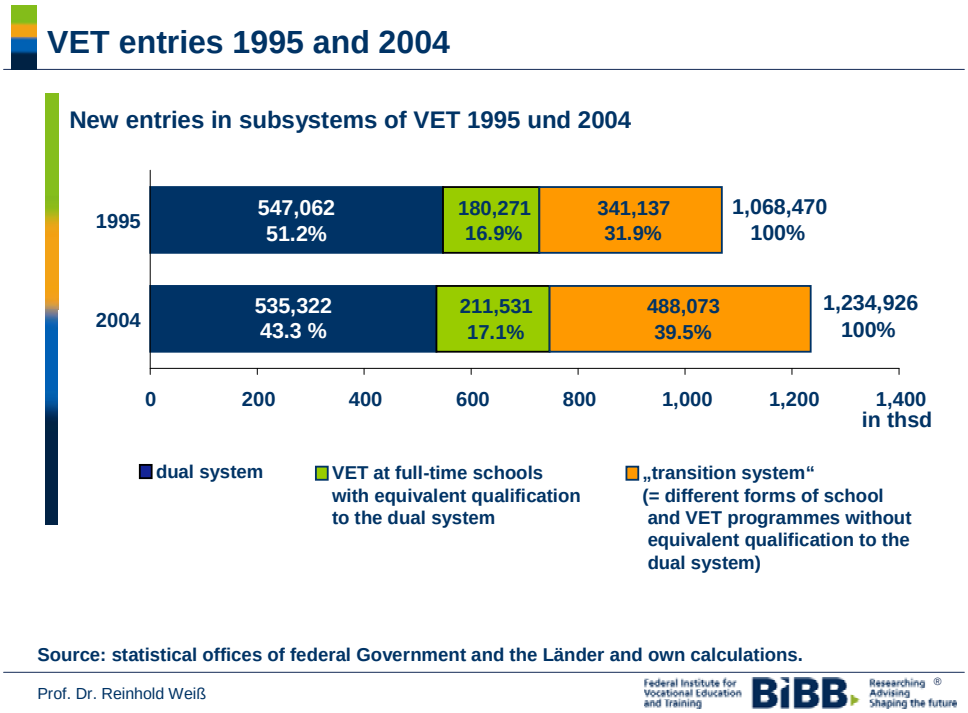
In the long run, the percentage of the workforce with vocational training has remained fairly stable. But in the short run, we have seen severe variations in supply and demand for dual system apprenticeship training. At the beginning of the nineties there was a huge surplus of training places, while recent years have been characterized by a shortage of training places.

The supply of in-company training places depends on the employment situation. In recent years a reduction in employment went hand in hand with an increase in the number of school leavers due to demographic factors. Substantial imbalances between the supply of and demand for in-company training places were the consequence. That does not signal a general withdrawal from vocational education and training by companies, however. For the training ratio – the ratio of trainees to employed persons – and the training enterprise ratio – the ratio of enterprises providing training to the total number of enterprises – remained relatively stable in the nineties, the years following reunification.

[Figure 2-4]

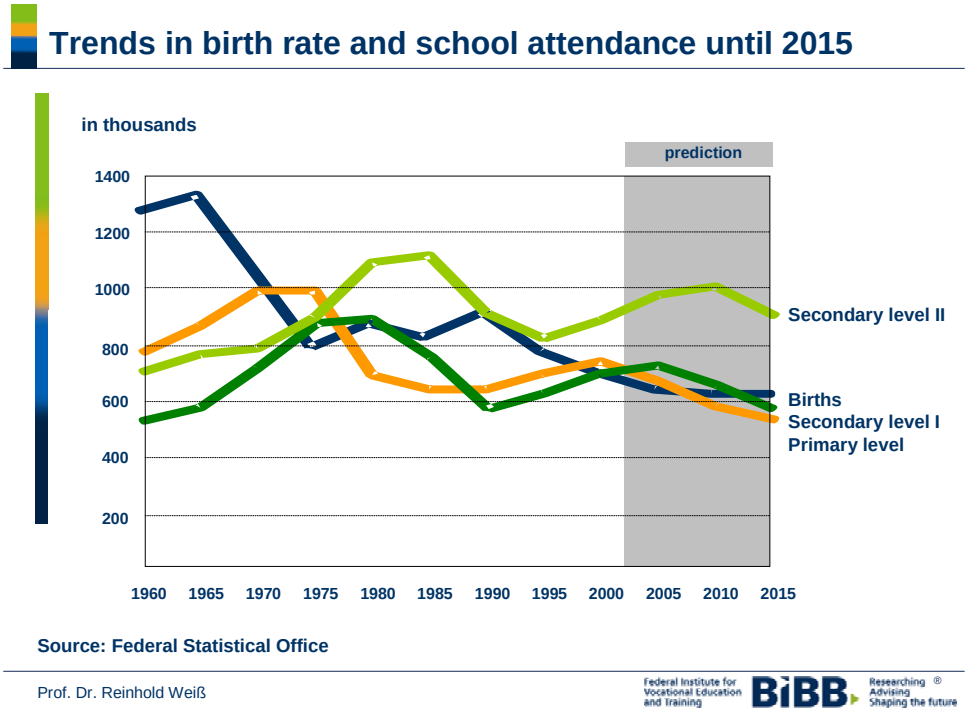


[Figure 2-5]



What has increased is the proportion of young people who are first channeled into vocational preparation measures and full-time school vocational training courses. The proportion of school-leavers transferring to vocational schools or joining pre-vocational schemes has risen enormously in the last few years. Particularly those school leavers who have not obtained a training contract with a company have entered this so-called “transition system”.

[Figure 2-6]



Secondary school certificates can be acquired in this "transition system", but generally no qualifications that lead directly to qualified employment in the labor market. These young people re-apply for an in-company training place later. If they have good school grades and/or secondary education certificates, they have a good chance of being given a training place on their second try. But from the economic point of view it is a cost-intensive detour, and for the youngsters it is a waste of time. The political aim must therefore be to build bridges between the school-based transition system and the dual system. The revised Vocational Training Act made enhanced provisions for admitting young people to a chamber examination following initial training at a vocational training school or other non-workplace establishment. If these opportunities are used appropriately, it will save unnecessary detours and wasted time on the

way to a recognized occupational qualification or to transfer competencies from one field to another.

Owing to demographic developments the number of school leavers will continue to increase until 2012/2013 and will then drop steadily. At the present time the main issue is to provide all young people with a vocational qualification if possible, but in future there will be a looming shortage of new recruits at all levels of the employment system. Against this background, what is needed is a two-fold strategy: on the one hand, the attractiveness of the dual system of vocational education and training and of an in-company/vocational career and further education must be maintained and if possible improved. On the other hand, better use must be made of the full potential of employees in unskilled jobs and persons without vocational training certificates.

And of course there are major areas of potential which have yet not been activated. For example, the involvement of migrants or young Germans with a migrant background is still fairly low. The involvement of foreign youngsters in vocational training is only 23.7 per cent of the age-group. And still 15 per cent of the total age group remains without any vocational training. These are usually only able to obtain poorly paid jobs and suffer a high risk of unemployment.

Ⅲ. Attractiveness for high potentials

Training in the dual system is a well-established element of German economy and society. It is an attractive basis for career development, even for those young people qualified to enter university. Every sixth new apprentice – that is 17.3 per cent in 2005 – was entitled to university admission. They had either technical college entrance qualifications or an upper secondary school leaving certificate. Their motivation to start an apprenticeship training program is to have either an alternative to studying or a possibility of acquiring supplementary basic qualifications for studying. Others were unable to obtain a college place because of capacity limitations, were not sure about their future plans or interested in a more practical qualification.

In that respect the dual system of vocational education and training is also a bridge to higher education. In 2005, 19 per cent of all those commencing higher education had already completed some kind of in-company vocational training. The proportion is especially high for those studying at technical colleges and in engineering and science courses as well as for economics students.

[Figure 2-7]

Qualification structure of trainees 2005

Training sectors	Without lower secondary school certificate	With lower secondary school certificate	With intermediate school certificate	With comprehensive secondary school certificate
Industry and trade	0.6	25.3	41.6	23.0
Craft	4.5	47.3	31.1	5.0
Freelance	0.5	16.3	57.1	20.7
Public services	0.1	4.7	58.5	31.8
Other sectors	--	--	--	--
Total	**2.1**	**30.8**	**39.6**	**17.3**

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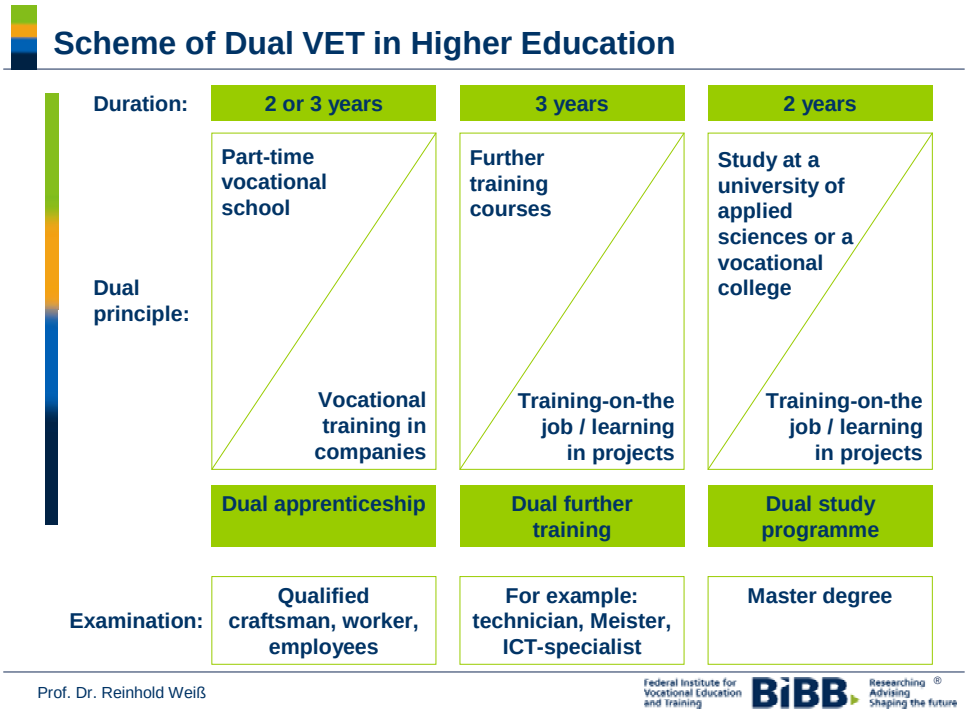
Higher education is currently being converted to bachelor's and master's degree courses. The objective is to increase the traditionally small proportion of university graduates in the population and at the same time to shorten the very long duration of studies. It is an open question whether this will be successful and how companies will assess the different degrees. Generally speaking, one can expect more intense competition between those completing initial and continuing vocational education and training and higher education graduates. As yet, it is impossible to predict how much of a competitive advantage holders of bachelor's degrees will have in the labor market over graduates of the dual system of VET.

[Figure 2-8]



On the other hand, cooperation between companies and universities is giving rise to new dual training models. A dual program of study combining a university degree with a recognized occupational qualification has already become an attractive alternative or supplement to the traditional model of apprenticeship training. Currently 670 courses of study already exist which combine dual training or continuing vocational training with study at universities. Around 43,000 students are registered in these programs, most of them at universities of applied sciences or vocational colleges. This is only a minority, in relation to the total number of students, but it is an innovative model and, at the same time, an expanding segment of the training market.

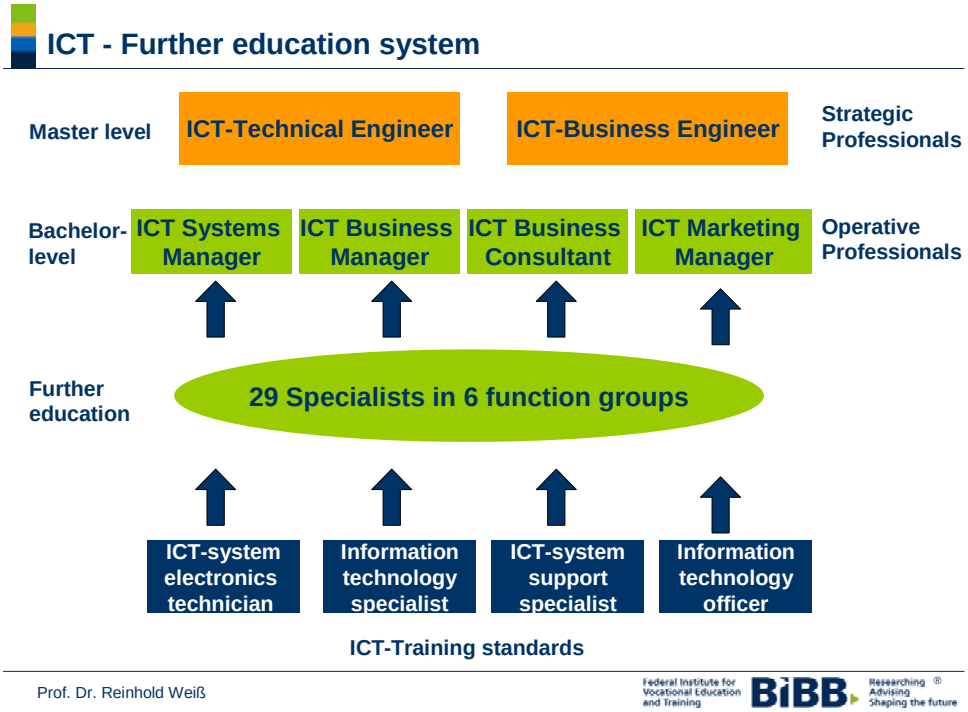
Ⅳ. Permeability between VET and higher education

School leavers in Germany today are offered many opportunities to make a start in working life. Vocational training and higher education are no longer the only alternatives. Highly committed young people can combine training in the dual system with a supplementary

qualification or obtain higher vocational qualifications through advanced training leading to an approved advanced training certificate. This prepares them for executive functions in medium-sized enterprises and provides much the same vocational skills and job opportunities as a university or technical college degree.

The concept and system of ICT-training is a good example to describe this approach. It is based on four IT-professions offered on the principles of the dual system of vocational education and training. Via practical experience and further education the graduates with a basic qualification in IT-professions can qualify and prepare themselves for an examination on two upper levels. The level of 'Operative Professional' is judged as equivalent to the bachelors' level and the level of 'Strategic Professional' is seen as corresponding to the masters' level.

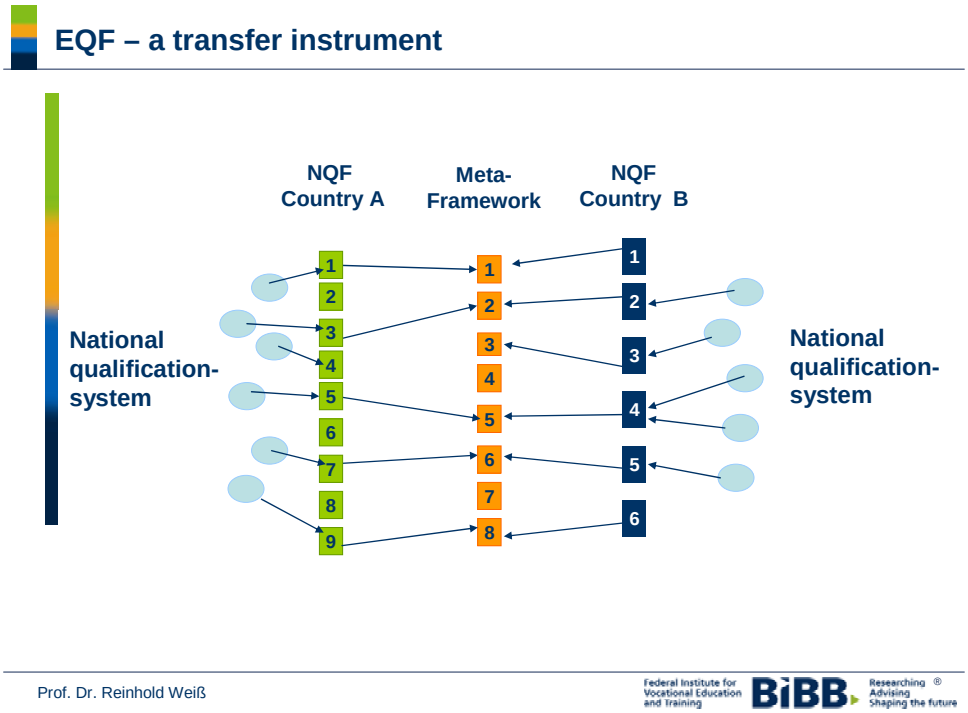
[Figure 2-9]



This advanced training certificate also entitles the holder to take up studies, especially at universities of applied sciences. But very few graduates take advantage of this opportunity, however. Universities and colleges can also grant credits towards a degree for parts of this prior training. Little use is made of this possibility either.

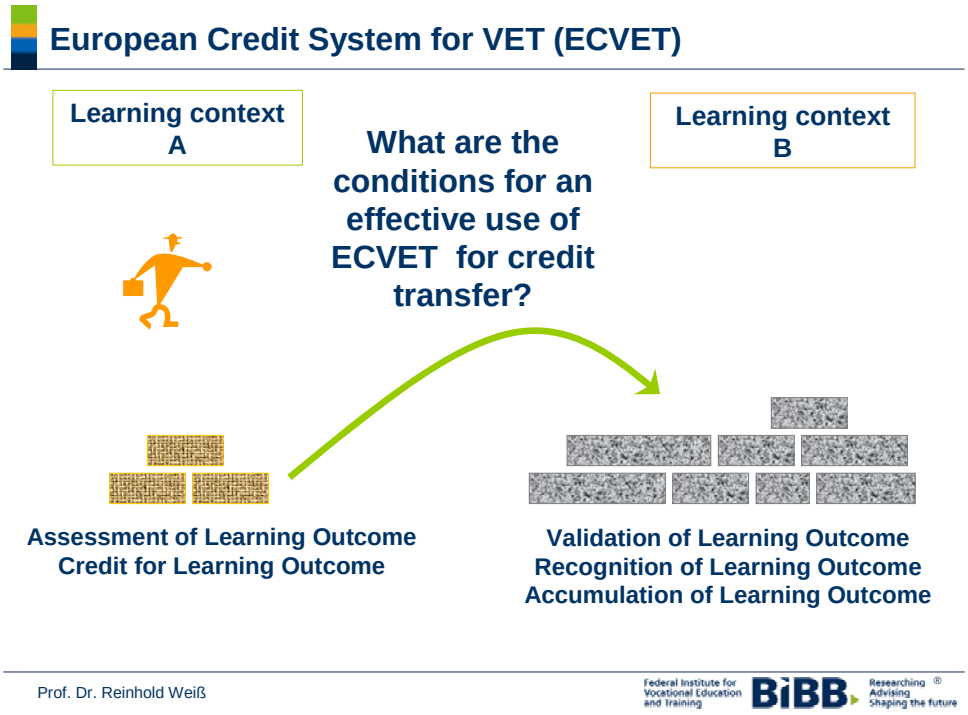
This shows, as the latest OECD studies confirm, that there is too little permeability between vocational and higher education in Germany as compared to other countries. Traditionally the educational pathways are fairly separate. There are rigorous divisions between general and vocational education as well as between vocational and higher education.

[Figure 2-10]



An important initiative to improve lateral mobility is actually the development of a European Qualifications Framework(EQF), and aligned with that, a National Qualifications Framework for Germany(NQF). The idea is to classify competences – regardless of how they have been acquired and certified – according to a standardized set of levels. EQF would therefore have the function of a meta-framework to relate different national qualifications to a common standard. As a universal instrument for transparency, comparison and translation, it will not only promote mobility between educational systems but also professional mobility within the European labor market. However, this twofold objective will only be realized provided that there is sufficient parity between workplace-based training processes in vocational education and school-based or academic training. As far as possible, every certification level should also be attainable via the vocational route, and every level should be linked with occupational practice.

[Figure 2-11]



In addition a major stimulus for more permeability can be expected from the development and introduction of a European Credit System for Vocational Education and Training(ECVET). This is applicable specifically to crediting what is learned in initial and continuing vocational education and training and vocational practice towards an academic degree. There is justified hope that with the aid of a credit system transcending the boundaries of educational areas. Vocational certificates can be made comparable and compatible with one another and with other certificates and degrees. To achieve this, however, the system has to be coupled with the university ECTS system. Up to now, however, the two systems have been running parallel to one another conceptually. The political challenge for the future lies in building bridges between both systems.

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Chapter 3

The Challenge of Korean Society and New National Human Resource Development Policy

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(KRIVET)

Ⅰ. Introduction

Expressed as 'The Miracle of Han River," Korea has achieved a very rapid economic growth during last three decades. With higher than 10% of economic growth rate per year, GDP per capita has increased almost 40 times from US 500 $ in 1960 to US $ 20,000 in 2005. Most theorists and researchers have agreed that affluent human resources with high level of education was one of the most important factors for this rapid economic growth along with other factors such as economic development policies, exports strategies, positive international environment.

However, recent challenges to Korean society from various aspects such as economy, demography, international environments have raised basic questions on the function of Korean education and HRD system and have required searching new paradigm for HRD. Thus, Korean government has tried to reform the HRD policy system since 1999 and recently adopted new HRD policy system, "National Committee of HRD".

Thus, in this paper, mainly based on the recent KRIVET's project 'Future Agenda for National HRD in Korea'[3], I will present the Korean HRD paradigm and the recent reform of Korean government for the new HRD system building.

[3] By request of Ministry of Education and HRD, this project has been done by Misug JIN, Chang Kyun Chae, Youmi Son, Changyoun Song, Seoungbo Kim, Youngseob Choi.

Ⅱ. The Challenge of Korean Society and the Need of New HRD system

Korea has confronted with the challenge from various factors such as slow economic growth since economic crisis in the end of 90's, low birth rates, rapidly aging, high rate of unemployment of the educated youth, 'educational exodus'[4], etc. Faced with these challenges, Korea has to find out new solution for education and human resource development. Factors to urge the change of human resource development can be explained more concretely as follows;

First of all, the need of the change of economic development paradigm requires a new paradigm for human resource development, too. Export-driven economic development strategies with competitive power based on low price of products during last decades has encountered limits because of the sharp increase of labor costs in Korea and the chase of BRICs with lower prices. In order to leap to advanced countries, Korea has no other options to transform to innovation and knowledge-driven economy from copying one; from quantity-based to quality-based; from low price to high quality. To transform to the knowledge-based economy, it is necessary to obtain human resources with high quality. For advanced economy, there must be high-tech development and advancement of service sector which need high skilled human resources with diversity, creativity and global competitiveness. The HRD system which produced massive medium level human resource cannot meet the need of new economy, any more. In addition, adults should learn continuously in order to adjust to rapidly changing occupation and technology in the advanced economy.

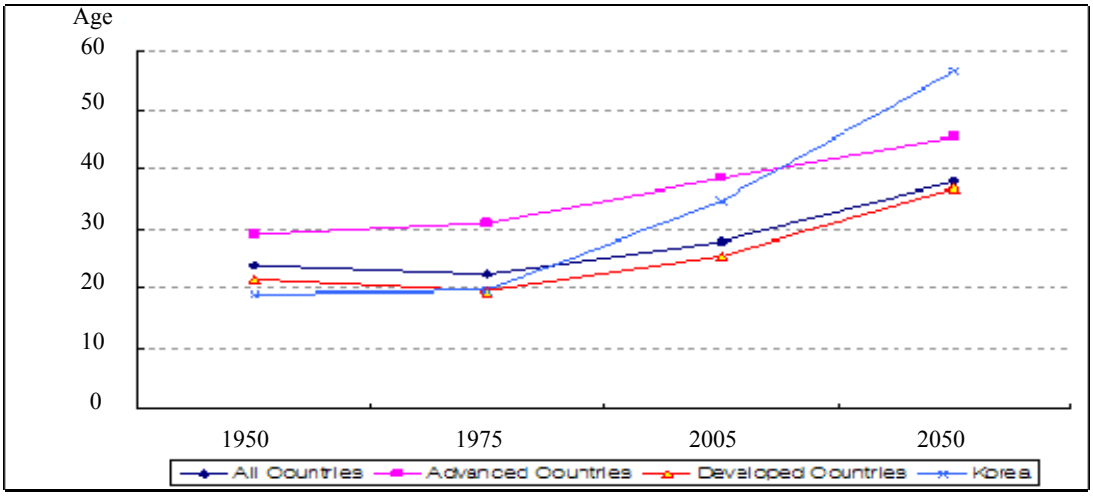
Secondly, demographic factors such as low birth rate and rapidly aging trend need the new HRD system. The birth rate rapidly decreased from 1.70 in 1980 to 1.14 in 2005 during last 20 year. It is projected that by 2030, the number of youth will be decreased by 1.5 million and that of economically active population will be decreased by 600 thousands.

At the same time, the expectation of life of Korean people has increased rapidly from 70

[4] It is referred to the phenomenon that there has been rapid increase of young students to study abroad in order to escape harsh competition or to receive better education.

year-old to 80- year old. The speed of the aging is the highest in the world. Along with rapidly aging, the social costs to support the old will be increased sharply. As it is the most effective way to support the old aged through learning and work, it is important to emphasize lifelong learning with good qualities for adults.

[Figure 3-1] The Trend of the Mean of Population Age of Korea



Source: National Statistics Office(2006)

Thirdly, globalization needs to reform human resource development framework. As human resources and capital can move all around world, with rapid development of information technology and transportation, human resource development framework with domestic perspective must confront with the limits. As can be seen in the sharp increase of the number of students of 'early studying abroad', Korean universities which enjoyed the monopolistic status under the situation to restrict studying abroad must face with foreign universities' competition to obtain students. The fact that even so called 'the best university' in Korea could not rank in the best 100 university in the world tells the weakness of Korean higher education.

Since economic development of Korea depends on the development of science and technology, the weak Korean higher educational system must be one of the barriers to Korean development. Thus, Korean higher education should reform by educating students with global talents and focus on educating rather than selecting students with good quality.

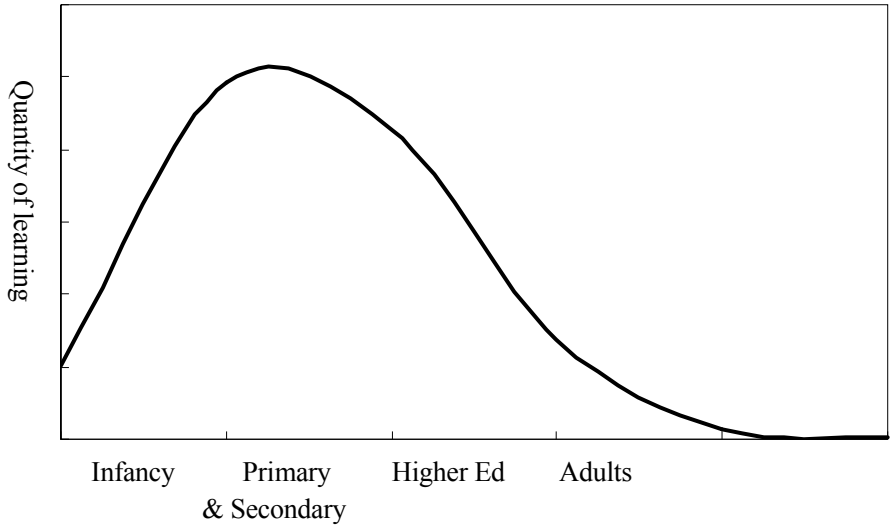
These changes of Korean society require a dramatic reform of the current HRD system

which has focused on the primary and secondary education. New HRD system must pay attention to and invest to all learners', learning at all life stages and on quality of education and training as well as quantity.

Ⅲ. Old HRD Paradigm: College Preparation Learning Curve

Korean old HRD paradigm can be depicted as college preparation learning curve. That is, Korean society has concentrated on their learning during primary and secondary education level and has not paid attention to the learning after college entrance or adult learning([Figure 3-2]).

[Figure 3-2] Old HRD paradigm: College Preparatory Learning Curve



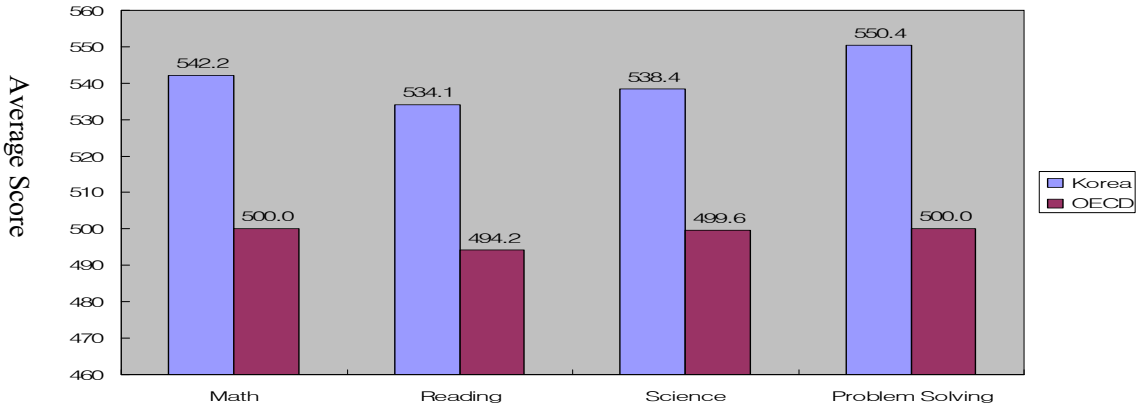
*This learning curve was made based on the participation of infant education, infancy and study time per week for primary and secondary, higher education, adults.

1. Youth Stage(Primary and Secondary Education Stage)

At youth stage, the performance of Korean education system has been excellent. At primary and secondary school level, the academic performance of Korean students is much higher than the average of OCED([Figure 3-3]). According to results of PISA2003 and TIMSS 2003, academic performance of Korean students is much higher than the average of OCED in terms of math, science, reading, problem solving. The score of Korean students in math and science was

the second highest and the highest respectively among OECD countries. However, the positive attitude toward learning is comparatively lower than other OECD countries. In important emotional indicator, such as self-confidence and interests of the subjects, the results were quite different. Average score in self-confidence of Korean youth ranked only 38th in math, 25th in science, and in interest, it was 31st in math.

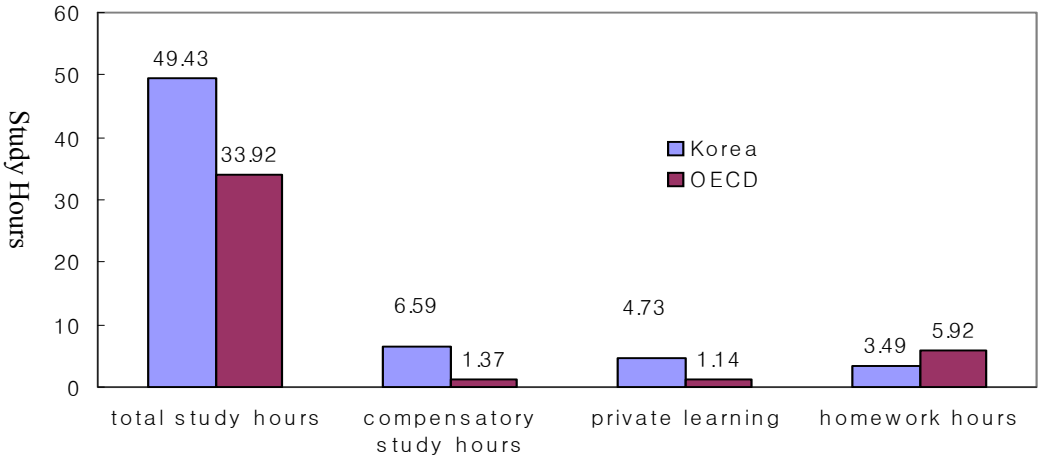
[Figure 3- 3] PISA Academic Achievement of junior high school students



Source: PISA(2003)

For college entrance, Korean adolescents have spent more time on learning compared to average OECD adolescents. The results of PISA 2003 showed that the mean of study time of Korean students is 49.43 per week, while that of OECD average remains 33.93. Korean students spent more time on private training less time on self-directed learning such as homework.

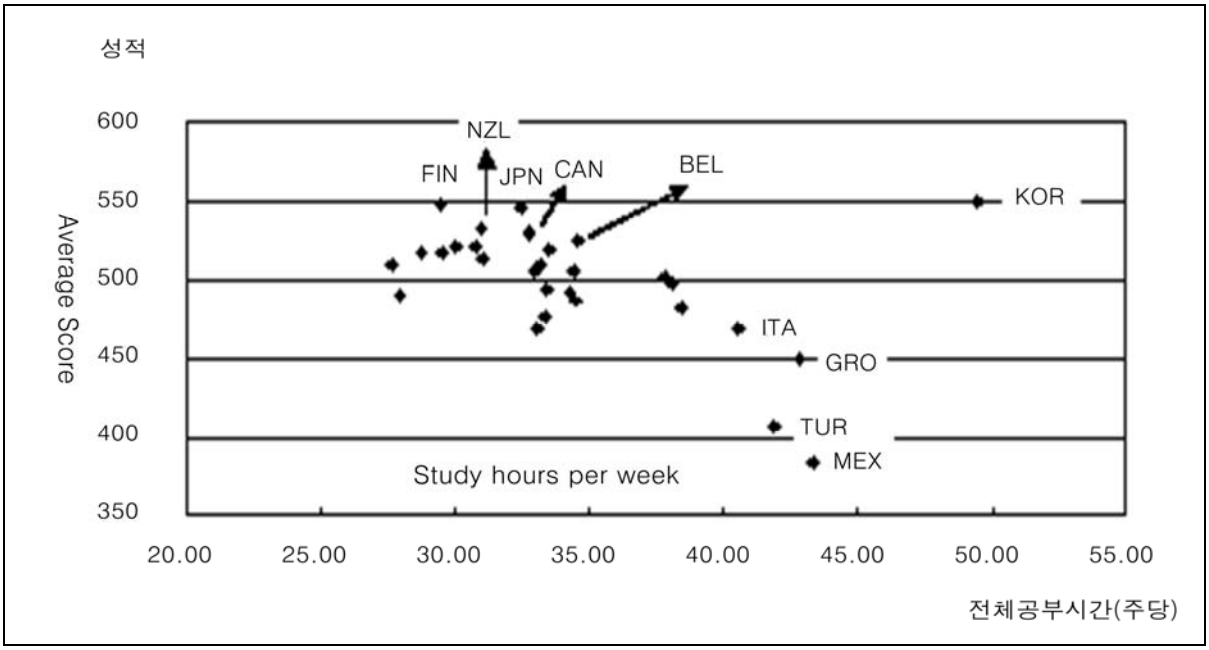
[Figure 3-4] Study hours Per Week of Korean students and OECD average



Source: PISA(2003)

In addition, considering the input, the education system at the primary and secondary level some questions about the efficiency of learning. In [Figure 3-5], comparing with countries with similar test scores such as Japan or Finland; Korean youth spent far more time on studying

[Figure 3-5] Study hours Per Week and Score of Problem Solving among selected countries



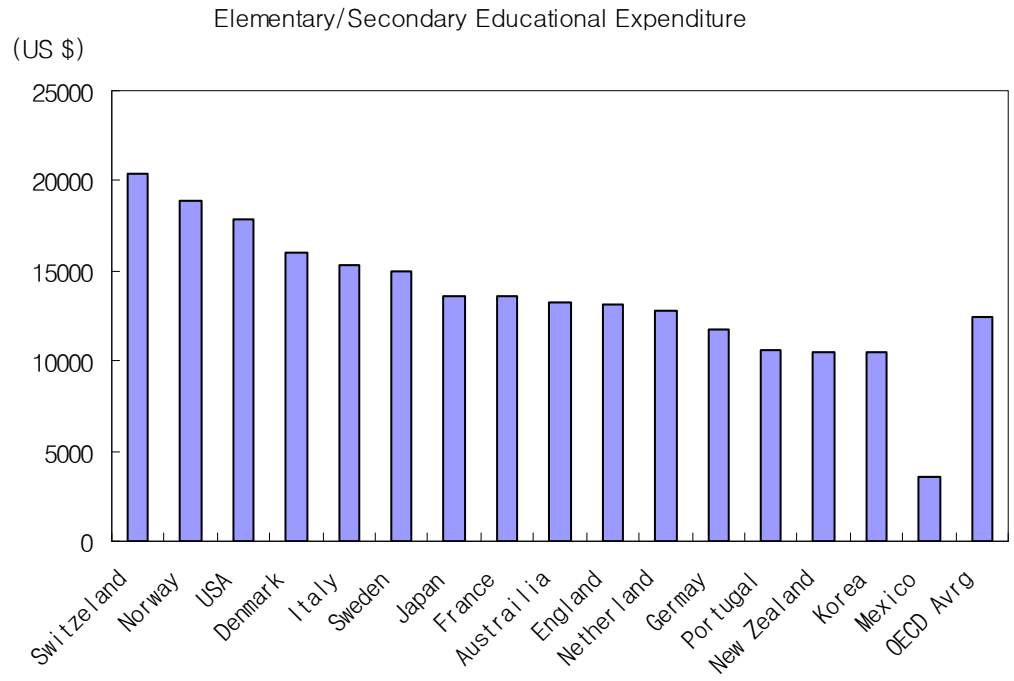
Source: PISA(2003), Chae,C.(2006),Transition of Korean Youth to School to Work, KRIVET

Educational expenditure on primary and secondary education of Korea reached the average level of OECD. Proportion of public expenditure at primary and secondary level of GDP is 4.4% which is higher that OECD average, 3.9% (2003). The level of public educational expenditure on primary and secondary is 74.6% and 92.1% of OECD average respectively. Considering the private expenditure, it is predicted to be much higher than OECD average. That is, total educational expenditure per student including private costs of primary school level and secondary level is 7,312, 1.3 times of OECD average and 10,569$, 1.5 times, respectively.

These results that Korean youths study more and performed excellently but are driven by extrinsic factors rather than self motivated factors require to evaluate more critically adolescent academic achievement of Korea. Considering self-directed learning attitude becomes most essential elements in lifelong learning society, positive and self-directed learning must have a

long-term positive outcomes.

[Figure 3-6] Educational expenditure per student at elementary and secondary education



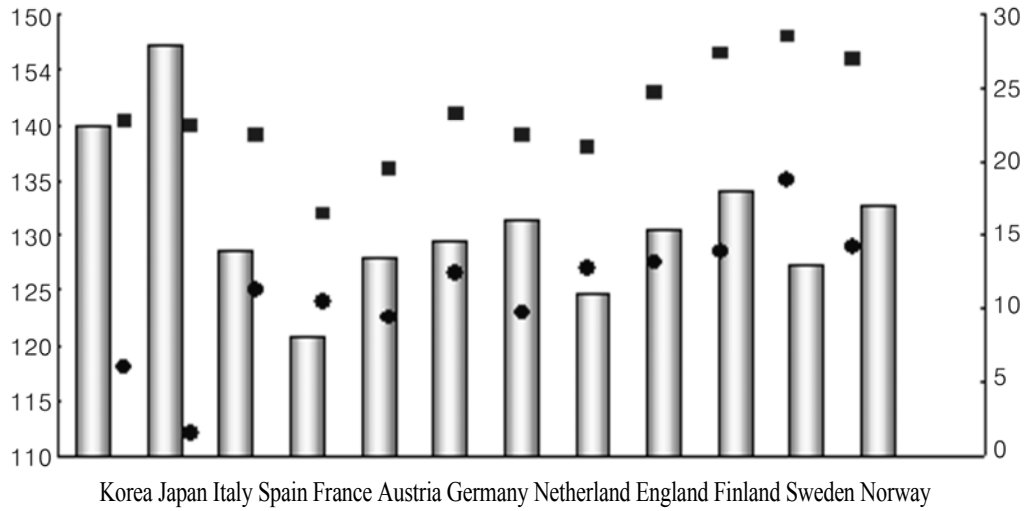
2. Higher Education: Low performance and low investment

Korean youths who had spent long time on studying study much less once they entered colleges. Study time of Korean college students per week is 39.5 hrs which is 10 hours less than that of secondary students. In other advance countries such as USA, college students study far more than those of primary and secondary students.

Unlike primary and secondary students, it is very difficult to compare the academic achievement of college students because of different system and major fields. However, in terms of core competency, the level of core competency of Korean college students is lower than other OECD countries and the gap between the actual competency level and the needed level by companies is the widest among other OECD countries. As can be seem in [Figure 3-7], the level of core competency needed by world of work is higher in Northern European countries such as Sweden, Norway, Finland, etc. In terms of the level of core competency needed by companies in Korea is almost same as other countries. However, the level of core competence

of students is much lower than other countries. Thus, the gap between the level of core competence of students possessed and that of the level needed by companies is much wider for Korean college students and graduates.

[Figure 3-7] The gap between the level of core competency of new graduates and importance at labor market among countries



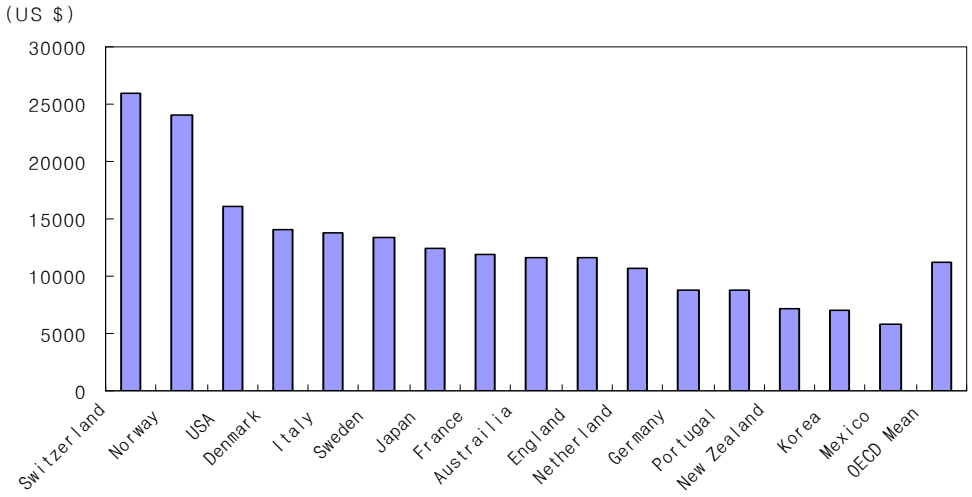
* competency level gap ■: level needed by economy •: level of college graduates on graduation
* As for Korean data is from the survey of the graduates of 2001 and for other countries, the data for 1994/1995 graduates.

Source: Chae, C.(2006),Transition of Korean Youth to School to Work, KRIVET

In 2007, IMD higher education competitive power in general, Korea ranked only 50th out of 56 OECD countries and among the IMD indicators. For the indicator that higher education effectively met the need of the economy, Korea was 40th.

Unlike primary and secondary education, at higher education, educational expenditure per student is only 7,089 US $, the lowest except Mexico among OECD countries. That is, 63% of OECD average, and 29.5% of USA. In addition, unlike other OECD countries, significant portion of educational expenditure at higher education is supported by private resources.

[Figure 3-8] Educational expenditure per student (2003)



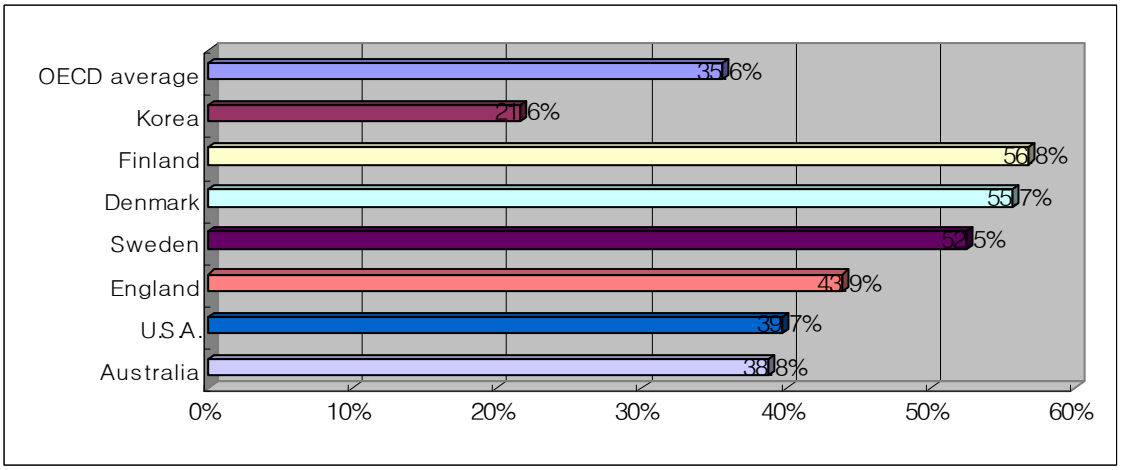
Source: OECD(2006): Education At a Glance

Ⅳ. At Adult Stage: Low participation rate of lifelong Learning

Korean adults, after they left their schools or colleges, do spent little time or money on their learning. Government does not spend much on adult learning either.

Participation rate of Korean adult lifelong learning, 21.6% is far less than OECD average, 35.6% which is less than half of Northern European countries.

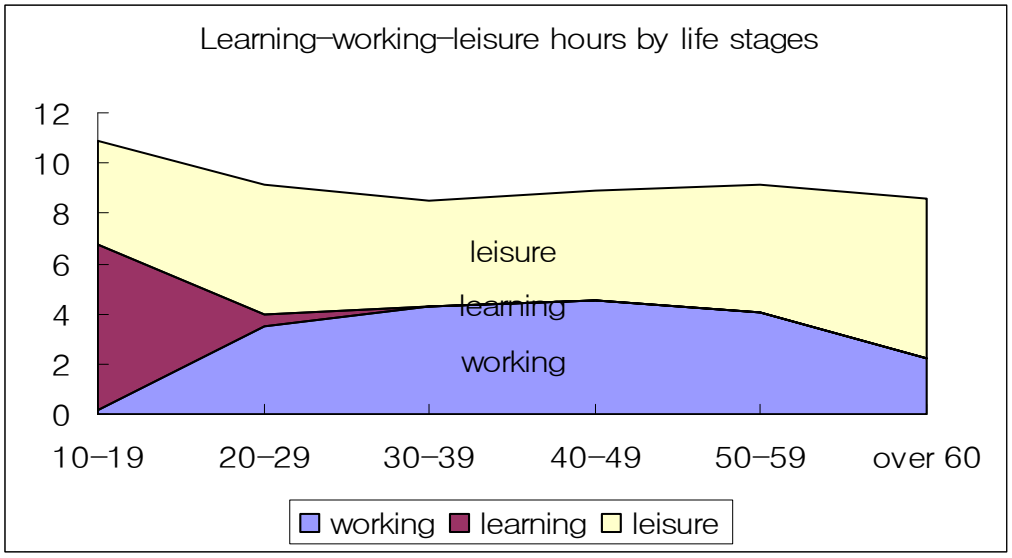
[Figure 3-9] Participation rates of adult learning of the selected countries



Source: OECD(2007), OECD Factbook 2007

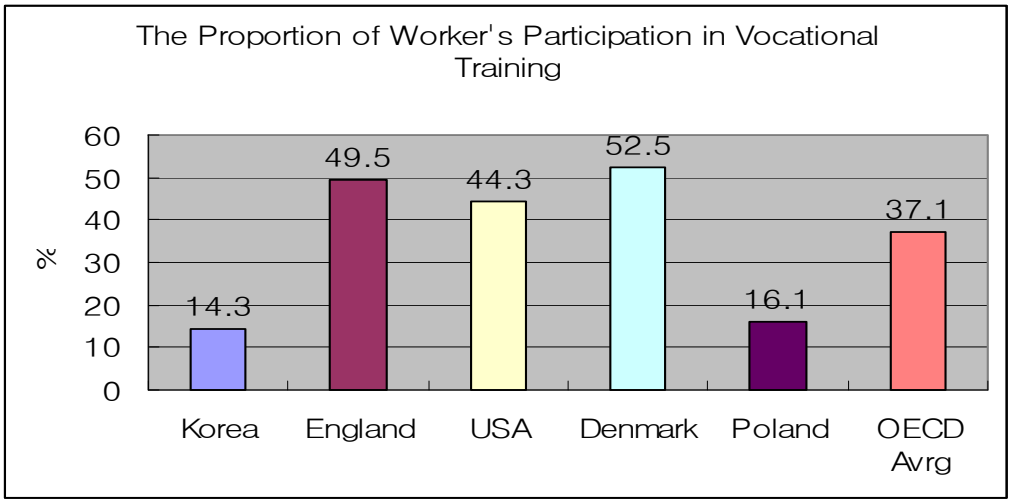
Learning hours by life stages depicted in [Figure 3-10] showed clearly the pattern of Korean society's learning which was concentrated on adolescent stage.

[Figure 3-10] Learning-working-leisure composition by life stages in Korea



Source: National Statistics Office (2003), Social Life Statistics Survey

[Figure 3-11] Rates of workers' participation in vocational competency training



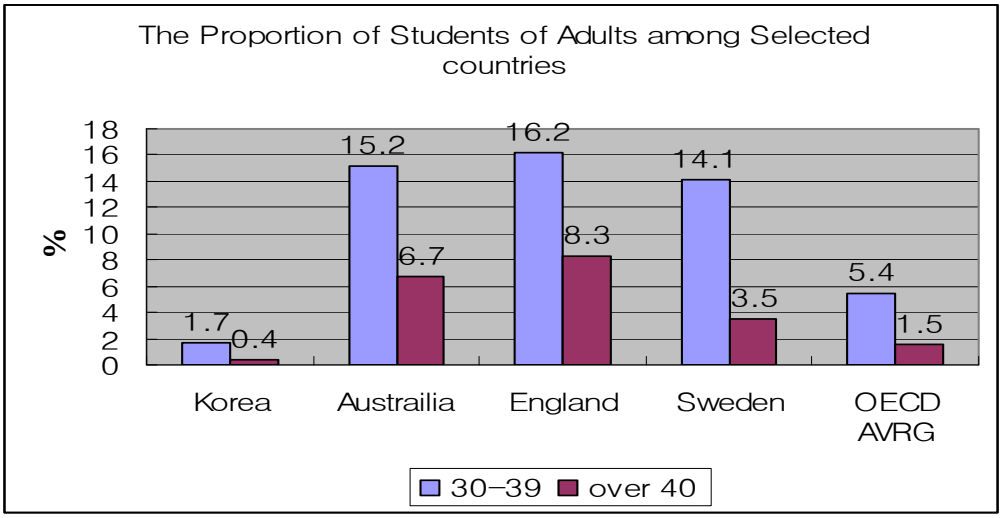
Source: OECD(2007), OECD Factbook 2007

In addition, adult' lifelong learning has concentrated on contents related to culture and leisure rather than vocational competency. The proportion of workers' participation in vocational training is only 12.7% while those of Denmark and USA are 52.5%, 44.3% respectively.

There are few adults who get recurrent education of adults of Korea. While the rate of

students among total population of 30-39 years old and over 40-49 years old are only 1.7%, 0.4% respectively, those of the average of OECD are 5.4%, 1.5% respectively.

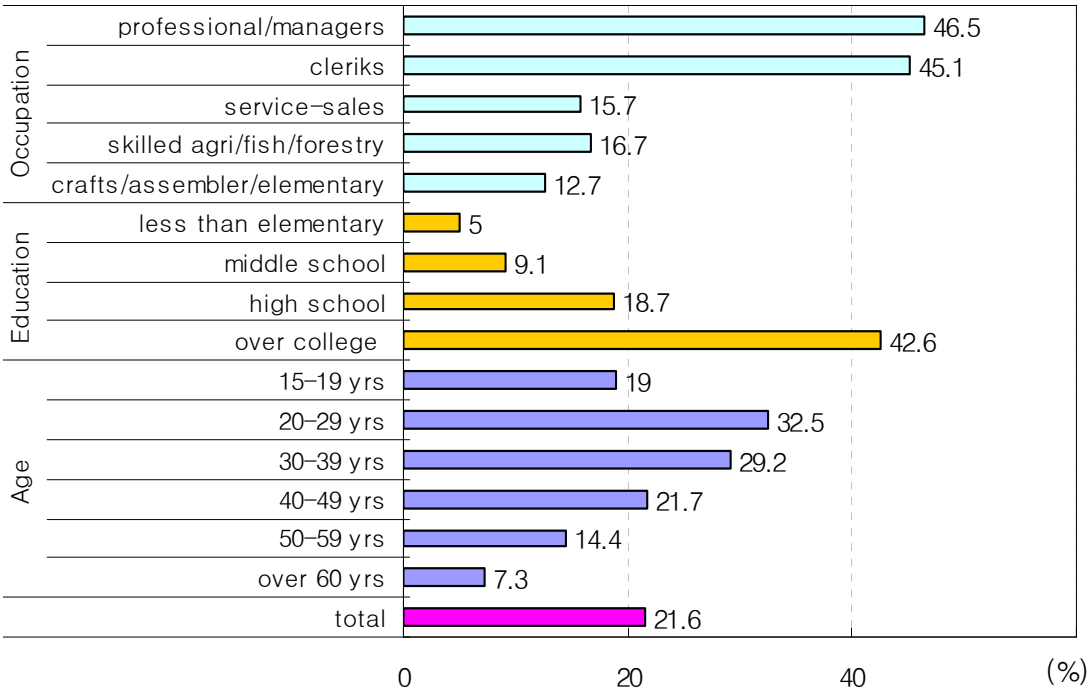
[Figure 3-12] The proportion of students of adults among selected countries



Source: OECD(2007), OECD Factbook 2007

In addition, in Korea, there can be seen the polarization in terms of participation of lifelong learning according to education, income, age, the size of company, and employment status. The higher educated, the higher earners, the younger generation, and the regular workers are participating more actively in lifelong learning than the lower educated, the lower earners, the older generation and irregular workers. Among workers, the participation rate in vocational training of workers in companies with more than 300 employees is 57.6% compared to 9.2%, that of companies with less than 4 employees. In addition, the participation of the vocational training of irregular workers' remains only 40% of that of regular workers. 56.5% of the expenditure of employment insurance for workers' training was spent on workers of companies with more than 1,000 employees, but 26.5% was spent on those of companies with less than 150 employees.

[Figure 3-13] The participation rate of adults in Korea by occupation, education, and age



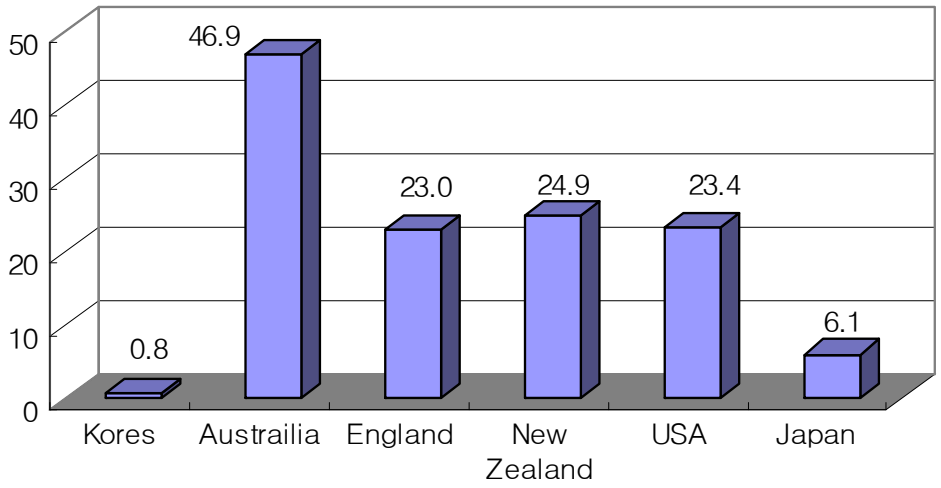
Source, National Office of Statistics(2004) Social Life Statistics Survey[5].

Data on the expenditure of lifelong learning of Korea show more clearly how weak the lifelong learning is. Among total educational budgets, the portion related to lifelong learning composed of only 0.8% which is much less than the other OECD countries such as Australia(46.9%) or USA(23.4%). This pattern of educational budget implies that Korean education and learning system focus on the formal schooling for the young. That is, while lifelong learning has been emphasized by Korean government, it still remains rhetoric and there is a long way to go to establish concrete lifelong learning system in Korea.

In short, characteristics of lifelong learning in Korea can be summarized; the low participation rate, inequity in learning opportunities and concentration on learning related to culture/leisure.

[5] The lifelong participation is defined as taking training course at workplace, coursed in private academy, taking cultural courses, vocational training, TV, radio, internet class, others. The survey was administered to 33,000 household samples, the activity of family members over 15 years old was analyzed.

[Figure 3-14] The proportion of lifelong learning of total educational budget of selected countries



Source: KEDI (2004): Level of Lifelong Learning of Korea.

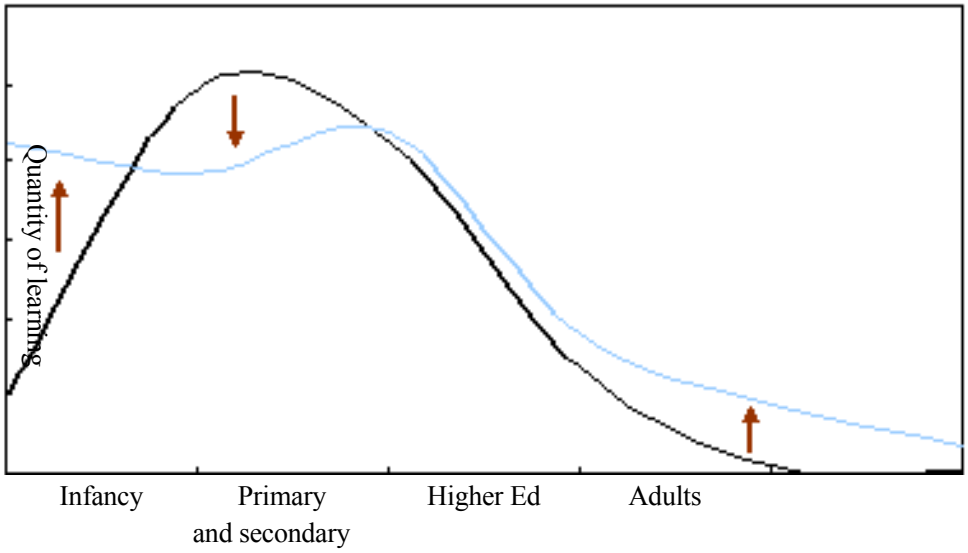
Ⅴ. New Paradigm for HRD: Lifelong Occupation Learning Curve

While old HRD paradigm can be described as 'college preparation learning curve' focused on the primary and secondary level education, the new HRD paradigm as [Figure 3-15] can be described as 'lifelong occupational learning curve' which more emphasizes infancy education, higher education and adult learning.

The new HRD paradigm can be contrasted with the old one; the open and flexible system based on the good circle of learning-working-leisure vs. the severed and separated system of learning → working → leisure. That is, under the new paradigm, people have to learn during their whole life and learning and working must be linked and the world of learning and that world of working communicate each other continuously. In addition, under new paradigm, it is the learners not the providers that has the power to decide what to learn and how to learn. Providers have to provide diverse education and training to learners in terms of contents, pedagogical method, and pattern. In short, education and training should be customized to learners. In addition, learning should be linked with the need of economy. While the learning related to culture and humanistic needs should be also respected, new HRD system, must try to listen to the need of economy as learning and training should contribute to economic

development which in turn can enhance learners' quality of life.

[Figure 3-15] The New HRD paradigm with lifelong occupational learning curve



The new HRD system tries to meet the needs of the knowledge-based economy by producing highly-skilled human resources and upgrading workers' vocational competency. Thus, policies and strategies to support to new HRD system should be made and implemented not only by Ministry of Education and Human Resources but also all other related Ministries such as Ministry of Labor, Ministry of Science and Technology, Ministry of Industry, Ministry of Environment, Ministry of Health and Welfare, etc. In addition, for the new HRD system, companies and labor organization should be participate as they are important partners for HRD system s.

The new national HRD paradigm can be summarized as <Table 3-1>. New paradigm requires increasing infancy education, good quality in higher education and the quality and quantity of lifelong learning. In order to describe the new paradigm more concretely, it is possible to compare some indicators of Korea and Sweden which is evaluated as one of the lifelong learning society(<Table 3-2>).

<Table 3-1> New HRD Paradigm vs. Old HRD Paradigm

	New Paradigm	Old Paradigm
Economic Growth model	Innovative, knowledge-based	Copying and Following
Engine of Economic Growth	Human Capital/Social Capital	Physical Capital
Policy Orientation of HRD	LLL of all life stage Linkage of Training/Education and Utilization	Focus on education of the youth Domestic/Quantity
Learning System	Learning ↔ Working ↔ Leisure Interactive Model	Learning → Working → Retire Linear Model
Initiative of Learning	Learner	Teacher/Supplier
Linkage between education and industry	Linkage between industry	Closed/Segmented
Role of government	Autonomy/Inter-ministerial Support Support through Information Statistics infra	Centralized/Segmented by of Drivers Ministries Planning and guidance
Role of Private Sector	Active Participation	Minimum Participation
Finance	Heavy Investment on Adult Learning Balanced Distribution of Education Finance among all life stages	Invests on Early education and training

<Table 3-2> The comparison of old paradigm and new paradigm based on selective indicators

	Old Paradigm	**New Paradigm**
GDP per Capita(PPPs; 2005)	$ 22,098	$ 32,111
IMD Nation's Competitiveness(2007)	29th	9th
Employment rate(2005)	63.7	73.9
- Female Employment rate	52.5	71.8
- Youth Employment rate	29.9	42.5
- The old aged Employment rate	58.7	69.6
Participation rate of Lifelong learning	21.6[1)]	40[2)]
Participation rate of infancy Education(2004)	20.3	85.1
Study time per week(2003)of secondary school students	49.43hrs	27.64hrs
Educational expenditure of primary and secondary education(2003)	$ 10,508	$ 14,953
Higher education competitiveness	40th	18th
Quality of life	38th	12th
Awareness of workers about Importance of education and training	24th	6th

1) Korea 2004, 2) Sweden 2003

Source: OECD(2007), OECD Factbook 2007. IMD(2007), IMD World Competitiveness Yearbook.

Ⅵ. Recent Korean Government Reform for National Human Resource Devel-opment(NHRD)

In order to meet new challenges that Korean society has to face with described in the previous chapters, Korean government expanded the Ministry of Education to the Ministry of Education and Human Resource Development(Ministry of E&HRD) in 1999 and legislated 'Human Resource Development Basic Act' in 2001.

<Table 3-3> The Change of NHRD policy systems in Korea

	~2001	2001~2006	2007~
Decision Making Body	~2000: National Economic Planning Board *Ministry of Education: Education Policy *Ministry of Labor: Vocational Training Policy	HRD Committee (Director: Vice Prime Minister of Education and HRD)	National Committee for HRD(NCHRD) (Director: President)
Plan	Sub plan of 5 year Economic Development Plan	1st, 2nd NHRD Plan	NHRD Plan
Perspective	Sub sector of Economic Policy	Main National Policy Agenda	Main National Policy Agenda
Initiative	Central Government	Central and Regional Government	Central and Regional Government and Private Sector

During last 8 years, the Ministry of Education & HRD achieved some significant outputs such as the first 5 year National Human Resources Development Plan(2002-2006) and the second 5 year Plan(2007-2010) and 'HRD committee' with director as Minster of Education and HRD. However, it was found that the governance system for HRD based on Ministry of Education and HRD which did not possess means to coordinate the diverse policies and strategies of other Ministries such as the budget distribution power had basic limits. Thus, in April 2, 2007, Korean government revised Basic Act to formulate the National Committee for Human Resources Development(NCHRD) in which President is the Director with members of all related Ministers, the leaders of business sector and labor unions.

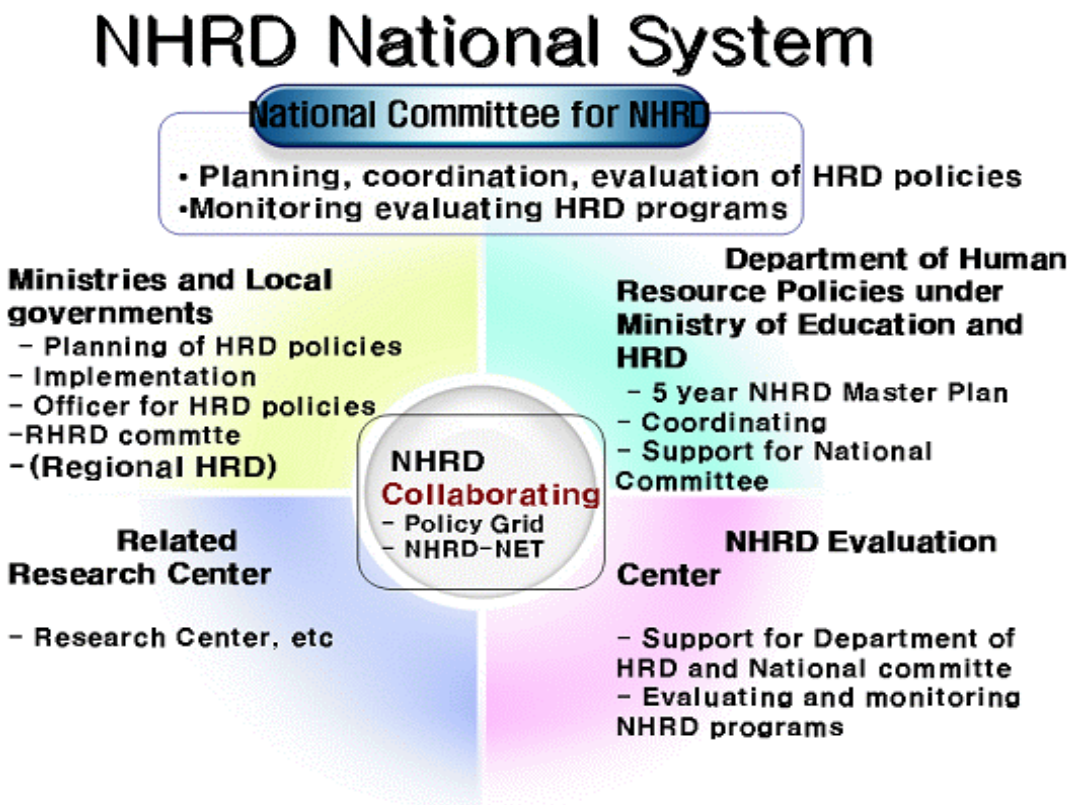
Under the revised Act, the NHRD policy system is constructed as [Figure 3-16]. NCHRD is

supposed to do planning, leading, coordinating and evaluating the HRD policies. To support NCHRD, the HRD Headquarter was newly made under Ministry of Education and HRD. As a think tank for the HRD Headquarter, HRD Evaluation Center will be designated soon.

The role of National Committee for HRD(NCHRD) is summarized as follows: First, it is supposed to make integrative planning for NHRD. It should link and coordinate HRD policies among divers sectors, divers ministries and divers regions. Some examples are; coordinating the supply and demand of human resources, cooperation among Ministries of Education &HRD and Ministry of Labor for adult learning, or coordinating regional HRD. In addition it is supposed to stimulate the participating of private sectors and labor unions. It has to strengthen rules and service delivery system for effective HRD policy implementation.

Secondly, it is supposed to evaluate HRD policies and programs with effective examination-analysis-evaluation system and to emphasize the feedback of evaluation to further policies and programs.

[Figure 3-16] NHRD Policy systems



Thirdly, it is supposed to support infra related to HRD such as manpower forecast, the system of statistics and information, training of HRD professionals.

The first meeting of NCHRD was held on July 27, 2007 and five policy agendas were reported and discussed: 'Function of NCHRD', 'Policy to supporting core competency of early life stage', 'Policy to reform education of engineering', 'HRD for army', 'Reforms of Regional HRD of Pusan City'.

Ⅶ. Conclusion

In Korea, the issue, effective NHRD has become an imperative national agenda as HRD has been agreed as one of main growth drive to push Korean current economy in stagnant stage. In this sense, the reform of Korean government in NHRD policy must be on the right track. However, it is not easy to predict how effectively NRHD system based on NCHRD and the Headquarters of HRD as there are too many factors, stakeholders. First of all, as the main coordinator, the Ministry of Education & HRD which does not have a strong power to link and coordinate other Ministries, it will be not easy to achieve the objectives of NCHRD. From this perspective, it is important for policy makers to be professionally competent in HRD policy area in order to lead and coordinate other stakeholders. Thus, the role of HRD Evaluation Center to support the Headquarter will become more important.

Most importantly, in order to achieve the lifelong occupational learning curve, Korean people have to change their concept on learning that is mainly important for college entrance. While it must take time to change people's concept and culture on education, government must implement policies to reduce the time to change Korean culture on learning.

Even though there might be many barriers to new HRD system, Koreans do not have alternative ways to reach advanced countries except effective and creative HRD system.

Chapter 4

Global Issues and Talent Management
- An individual perspective

Gary Mathews
(IIP UK)

Ⅰ. Introduction

My involvement with the World Futures Society allows me to keep up to date with many issues pertaining to organizational development in the coming years or decades. Such trends BY DEFINITION are the issues that will affect planning and staff development for employers, who will need to deal with the implications and outcomes of these changes. The World Futures Society gives many examples of the sorts of changes we face, and tends to divide these into near certainties and possibilities. A few examples will help here:

Ⅱ. Near certainties

It can be said with some conviction that by 2050 the developed world population overall will live longer due to better diets, lifestyles, and health care. Conversely there will be greater numbers experiencing ill health and scarcity in other parts of the world which may lead to unrest and conflict.

The information industries will continue down present tracks and will be embedding a knowledge dependent global society. The mobility of knowledge will imply greater possibilities for population movements or inertia and potentially freer labor.

The expansion of increasingly cheap consumer goods will lead to a continued growth of

consumerism. Businesses will need fewer managers due to staff empowerment and the development of individual outcomes based working patterns.

On the other hand, an increasingly divided world will enhance the needs of security in many areas which will mean less individual privacy. Oil will still dominate energy markets, but other means of power will be developing rapidly. We should see wave energy providing increasing levels of power needs; Nuclear fusion; Fuel cells.

Ⅲ. Possibilities – to 2030

Predictions indicate that there will be real advances in artificial intelligence, which may manifest as such items as virtual pets, but which will also help with new ways of learning with less need for "human" intervention. In medicine possibilities include electronic diagnosis, genetic activity, new artificial organs(e.g. eyes). It is likely that there will be an increase in the numbers of returning economic migrants to countries of origin, and I shall refer to this again later.

We may see viewer personalised advertising linked to locations and the end of paper money. Changes to methods of production could lead to mass unemployment in developing economies. We should have 95% computer literacy in W1, and possibly direct brain links.

Ⅳ. Further possibilities

Changes in the home in developed countries may include – 3d home printers; virtual reality in games etc – also used in retirement homes. Robots could outnumber people in W1 by 2040 and this would link to the Military– Robot soldiers; smart bacteria. In space we might talk of mining the moon, and Mars exploration would continue.

Ⅴ. The question we MUST address now is "Who will manage these possibilities?"

It is no use companies waiting until change is upon them to consider how they will deal with it. By then responses will be too slow. It is worth pointing out that staff in their 20s now will form core numbers of senior managers by the year 2030. At the same time experience in the workforce will still exist as the number of older and part time workers increases due to choice or necessity.

As far as the next batch of mangers is concerned, we need to ask what we, as employers, should be doing in terms that are business critical. We must ensure they, and their organisations, can flex their current skills and develop new talents in the light of rapidly changing circumstances.

Ⅵ. What are the signs of talent?

I believe that talented people:

- Are innovative
- Have an urge to grow
- Seek meaning and purpose in all they do
- Want to demonstrate superior performance
- Show no fear of accepting and dealing with the "futurist" issues
- Are always "boundary scanning" – looking at challenges and opportunities on their personal and organisational horizons
- Seek to respond flexibly to issues.
- Are people focused and want to get the best out of their staff.

Ⅶ. Managing talent

If the above qualities of talented people are accepted, we can distil this definition into saying that overall talent is about uncertainty and dealing with it. - Talent involves people in motion, taking risks, being innovative.

The future may be uncertain but has some very possible developments which we will need to face. Unfortunately the management of talent in companies trends to be rather sporadic, and can be found anywhere on the following scale:

- No strategies, or structured practice, and management of talent is informal or accidental
- Evidence of isolated pockets of talent management but no overall strategy
- Integrated talent management for some parts of the organisation
- Evidence of talent management strategy designed to deliver HR strategies
- Talent management fully integrated into **corporate** strategy – individual and pooled talent understood and taken into consideration at strategic planning levels.

Successful Talent Management approaches differ one to another but all have a number of elements in common:

- The organization develops a searing honesty in evaluating its people and capabilities in each key area.
- Feedback is used as a primary means of performance improvement, it is about development, not about coercion
- Leaders actively demonstrate their commitment to the objectives by making regular changes needed to meet objectives
- New talent is welcomed and easily absorbed – new staff are well inducted and any initial development needs undertaken. Examples of activities such as coaching are generally in evidence.
- Succession planning becomes part of the talent management approach as managers identify the skills and behaviours needed in the light of changing circumstances.

Development activities for staff reflect these needs.

- Managed talent will ensure skills available in the organisation are already understood. In the International Domain we find that both talent management and succession planning are increasingly complex due to mobility constraints, transferable skills issues, language, cultural aspects etc.

The chain of events that leads to strong and sustained business results starts with great managers who defy common management practice at virtually every turn, says Curt Coffman, global practice leader for employee and customer engagement consulting at The Gallup Organization. Managers tend to select employees according to the skills needed for the role, but great managers select people for their talent. It can also be argued that employees can be selected for their inherent talent – do they display the characteristics of a talented individual outlined earlier?

There are approaches to the identification and management of talent which can help. Using an example from my own area of current expertise, I can report that the UK Government has an approach which encourages companies to constantly determine how staff development links to business needs at all times and al levels by means of an underpinning set of good practice indicators.

33% of UK companies now use this approach, and it is operating in 27 countries across the globe. Investors in People, as it is known, operates via 3 Principles and 10 themes. It is an improvement cycle that asks employers to articulate the links between development and business improvement.

I would argue that this clarity of organisational goals, linked to individual development is a primary means of ensuring that talent is identified developed and managed in the light of changing circumstances thus leading to the ability of talented staff to manage futures issues rapidly and effectively.

Ⅷ. The talent paradox

However, in discussions with organisations using this constant review approach, an intriguing paradox has arisen. This paradox impacts on the way organisations are managed going forward and equally on how the pool of talented staff and teams is deployed and managed. It has implications for the role of senior teams. The paradox, as I articulate it, states that

"The better that managers effectively manage talent to deal with futures issues, and the more they review development and learning in the light of circumstances, then the quicker those futures changes will happen because staff will become better at working with them"

For example, a company making microchips which manages its talented teams properly will become more adept at making chips than others – thus accelerating the process of change in the industry and further squeezing the pool of talent to meet ever more evolutionary activity

So where do we go from here? – How can we manage these complexities and contradictions and what else do we need to take cognisance of? I assert that that proper talent management is essential for success in managing futures scenarios. It must surely be part of corporate good governance so be addressed at the highest levels. Good staff management IS good governance.

How to locate, recruit and deploy individuals is essential to strategic processes. But this can only be done by looking to short term development and long term probabilities and possibilities – otherwise you are managing talent into a vacuum. And it must take account of the talent paradox which will speed up performance and make further demands on talented leaders and staff at shorter intervals – we need to beware of talent burnout.

A structure, such as the UK government approach, can place talent and business development into the highest level of the company's consciousness. There are a number of such structures and what is right for one company will not be right for all. There are further variables that I would like to now consider.

There have been clear evidences in recent years of “reverse migration” - Migrants, their children or grandchildren, are choosing to return to countries of origin, or are being sought as returners to their own countries. They can bring new skills into the economy at a crucial time - as well as language skills and cultural understanding. They can often “hit the ground running” and make real impact on local economies in a short period.

Today, returnees are increasingly characterized by transnational networks, reflecting new migration circumstances that are evolving at the beginning of the 21st century. The globalizing effect of easy travel, fluid citizenship status, and rapid communications are key factors driving this change. As a result, today's returning migrants are increasingly younger, more highly trained, and able to shuttle back and forth between their country of birth and their adopted country.

Skilled return migrants are poised to become more important to local government policy. And they hold the potential to help build global networks, forge further links between sending and receiving countries, and directly contribute to development efforts.

Some of these initiatives work to match returnees' skills with their home country's development priorities. In the 1990s, the International Organization for Migration implemented a program called "Migration for Development" in several countries in Africa, Eastern Europe, and the Caribbean that offered financial incentives and advertised "important vacant development positions" such as managers, engineers, and policy analysts for those contemplating return. Country officials have instituted innovative policy strategies to reach out to this skilled migrant pool. China and the Republic of Korea woo expatriate researchers back home with science "parks" designed to concentrate high-tech industries or science-related businesses.

Many other examples are starting to emerge that completely reverse trend we have seen over the last 30 years . They include Latvia, Estonia, New Zealand, China, Mexico, Ireland. So this group of returners is a potential further pool of talent – a source of growth – that needs to be taken into account when talent planning or when recruiting – recruiting abroad from this pool is

increasingly realistic and cost effective. That way employers get access to even more qualified and experienced staff with growth potential and new ways of looking at the world

However, it is not sufficient to identify learning needs, nor is it sufficient to support organisations with structures to aid development. What is a key is the ability of companies to provide the right staff and management development at the right place and the right time – and evaluate its effectiveness. A prime example of the development of staff has been the growth of Corporate Universities. These reflect a company's desire to own the development activity so that it is tailored for the needs of the individual in the organisation.

If we look at why Corporate Universities (CUs) are set up, a set of common threads starts to show. These revolve around the organisation of training; the ability to quickly respond to organisational change; common culture issues; employee retention; and remaining competitive through the most effective staff development – although there is a need to ensure this IS the most effective and I shall return to this again later.

But the successful development of a CU requires some basic structural and personnel facets to be in place if it is going to be successful - for example, the CU needs complete support for the top management team; The design of the CU must fit with the organisations cultural and learning styles, and that structure needs to be carefully considered in the light of the various options, funding for the design must be made available and evaluation criteria need to be built in to the design, so as to ensure return on investment, and the CU learning must relate to the products, services and management development needs of the company. Technology issues must be resolved as part of the consideration of learning styles.

However, I should like to bring a caveat – and a rather large one – to the consideration of the whole CU approach. This caveat is based on my own thoughts, and is also in line with research undertaken by Jim Dator of the University of Hawaii. Dator points out a number of indisputable truths in terms of the historical development of Universities. Up to the 19th/20th Centuries in Europe, Universities were Liberal Arts establishments – some dating back to the 1400s - which often had a clerical (in the religious sense) function and purpose. It was only as the industrial

revolution took hold in Europe that a movement commenced – in Germany initially – that led to the university sector beginning to provide learning for the new skills and technologies arising out of the needs of the developing industrial societies – in terms of physics, chemistry, etc – and often in the context of the needs of the military as empires grew in the 19th Century – thus the function of learning moved from the classical to the being increasingly applied – and increasingly became judged on what difference it made to these new technologies. By the 1960s this approach was completely ingrained in HE worldwide – and was spreading into non industrial areas as attempts were made to turn less empirically applicable disciplines - management, Sociology, Psychologies etc – into measurable sciences -even now we hear parents question their offspring about the "value" of degrees in English Literature, Classics etc.

Since the 1960s I would argue that this approach has increasingly dominated learning and has led to many frustrations and conflict – one area as an example is the area of the evaluation of learning – this is difficult where the learning covers something like psychology that even within its own discipline boundaries does not lend itself to the givens of empirical observation in very case.

Equally, the structures of Higher Education, and the vast sums of money spent on those structures can lead to an inertia which is the exact antithesis of the original aim of HE – to stretch beyond the boundaries of current thinking to new realities and new territories. It is clear from looking at any MBA prospectus that – with some variation – these are still structured around learning methods that arose when they were established from the 1960s onward, and that companies and individuals still have expectations that an MBA way of looking at the world provides - and perpetuates the internal management structures of many companies – which are in turn supported by HR and also often by Civil Service structures and government structures – they are all hierarchical.

I would argue that the talent issues I have described and the futures issues with which I started have meant that this approach to learning is unsustainable and will quickly prevent organizations from successfully dealing with the events that are unfolding.

Managers of 2020/2025 etc., who are going into developmental phases now, cannot learn to manage as we have done in the past. If we only teach them that they won't be able to deal with new worlds. People in the workforce now are using their minds /their imaginations in very different ways from their predecessors – they meet in virtual space, indeed they date in it. They function in a "gaming" universe. They learn through cyber interactions. They value non hierarchical skills demonstrated in these universes. They buy on line. They book things on line. They do personal banking business on line. They carry mobile devices giving them full access to virtual universes. They talk constantly via e mail, text, and mobility. They don't call meetings. They make decisions without meeting others in the decision making groups. They can plot scenarios via software that emulates gaming skills. Etc., etc., etc.

These skills align with the skills that will be needed to manage the developing industrial and /or economic and social patterns –. Virtual offices will be scattered across the globe. Instant decisions. Constant transfer and sift of information. "Managers" won't manage hierarchies any more and companies want to have the same core products – everything will be based on effective virtual swift decisions in the light of rapidly evolving information. The skill sets needed will be those of gamin (imagining/scenarios/risk), communication – who do I NEED to speak to, not "going up the line" virtuality – "I can speak to anyone in any sphere"

Research "I'll look it up on Google before I go any further" sharing of information across company boundaries "I need to put this into Wikipedia " and many similar issues.

Ⅸ. Conclusion

Where I am going with this is that companies need to nurture and develop people with such skills NOW. Otherwise they will not be able to deal with the issues of 10/15 years hence and they will start to become irrelevant. A structure, e.g. UK government approach, can place talent and business development into the highest level of the company's consciousness, so allowing the organisation to consider such questions in the context of business improvement. What IS certain is that the answers to current business issues and HRD is NOT certain. But good management must rely on identifying people who can act swiftly and responsively in the

interests of their companies.

Developing those staff is what I mean by managing talent. Forecasting too precisely the outcomes of the revolutionary changes we all face can be problematic – but Futurists like Bill Halal take out as much uncertainly as possible, and the Futurists agree that IN GENERAL the directions they predict are likely outcomes.. Thus themes arise from the confusion of ideas, and the most successful organisations must be those whose staff and leaders are able to act on, and manage, those ideals - organisations which manage talent to learn and move on – the ability to create visions to transform the organisation in the light of change; the ability to identify and develop radical partnerships and totally new ways of working in the context of the current situations and future probabilities - the ability of managers/leaders – or whatever we call them, to act fluidly and in ways not previously considered – moving like an amoeba across the economic and social fibres in which it finds itself – changing direction as necessary. Developing internal, trust based relationships and robust supply relationships that add real value to goals. Sharing language and assumptions about the future, and ensuing the environment is understood and managed in the context of its growing virtualism – not that the organisation is constrained by old and worn boundaries – either real or imagined.

Finally:

Companies must be brave, flexible, diverse, they must be clear about goals, but be adaptable. They must continually scan horizons, and ensure talent is identified across the workforce. They must evaluate development and constantly be prepared to change direction.

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PART II

HRD Trends in Developing Countries

Chapter 5

Recent Developments in National HRD Policies and Programs for TVET

Tariq Mahmood
(NISTE, Pakistan)

Ⅰ. Introduction

Pakistan emerged on the map of the world on 14th August 1947 after getting independence from approximately 189 years of British rule on the Indian sub-continent(1757 to 1946). Administratively it has been divided in to four provinces namely; Punjab, Sindh, North West Frontier Province(NWFP), Balochistan and Northern and Tribal areas and Islamabad Capital Territory. The total area of Pakistan is 796096 square kilometer with estimated population of around 159.3 million as on 30th June 2007.

The education system of Pakistan, which is the major producer of human resources flows into two main streams of general education leading to higher and tertiary education and engineering and technical and vocational education leading to engineering, technology and vocational education. Management of education is primarily the responsibility of the provinces through the provincial ministries of education while the Federal Ministry of Education is responsible for national policies, curriculum and standards setting, international liaison, national educational reforms and general coordination in various educational matters. The management and implementation of technical and vocational education is divided among Federal & Provincial Ministries of Education and Ministry of Labor and Manpower and other agencies like Social Welfare, Agriculture, Industries, and Overseas Pakistani Foundation, etc.

Prior to the year 2000, the implementation of programs and projects in TVET by various

ministries and in every province by various departments and with varied frequencies had the less impact as a whole at the national level and couldn't be seen meeting the needs and requirements of producing skilled manpower for local and foreign labor markets. The establishment of national technical and vocational training authorities and councils mentioned in the past policy documents couldn't be realized until 2006 when National Vocational & Technical Education Commission(NAVTEC) has been established in 2006 in Islamabad. The Technical Education and Vocational Training Authorities(TEVTAs) in the province of Punjab already existed since 1999 and an ordinance for Balochistan province for the establishment of B-TEVTA has also been promulgated in 2006. Similar authorities are likely to be established in the other two provinces soon. These recent efforts show realizations at the top level to revamp Pakistan TVET system nationally and provincially. The expectations are high from these authorities due to top level commitment and resource allocations to achieve their objectives/ targets.

This paper presents the management, implementation and growth of TVET system in Pakistan in view of the recent HRD trends, policy initiatives of the government, the need to satisfy local labor market demands and workforce mobility across the border.

Ⅱ. Formal Education System and Labor Market

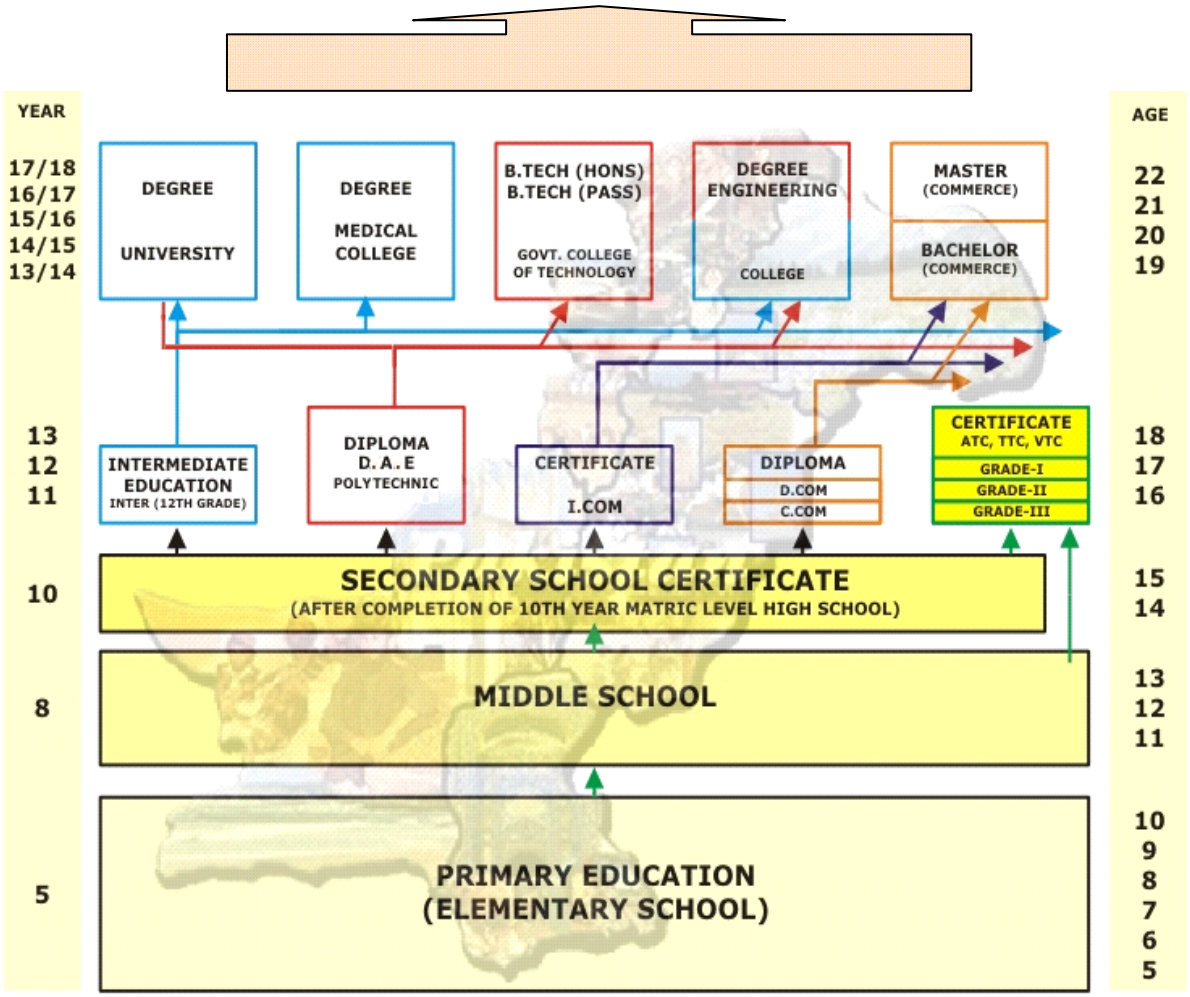
The formal education system with its stream of Technical and Vocational Education Training that produce workforce for labor market can be seen from the [Figure 5-1].

It can be seen from the figure above that foundation of formal technical and vocational education is based on general education of 8 & 10 years respectively. The vocational education starts as soon as after middle school education at the age 13+ while the technical education starts as soon as after secondary schools at the age of 15+. The vocational training institutes(VTIs) produce semi skilled and skilled manpower which gets G-III(the basic level) to G-I(the advance level) trade certificates and enters the labor market. The polytechnic institutes produce technicians and supervisors which get Diploma of Associate Engineers(DAE) and

enter in the labor market.

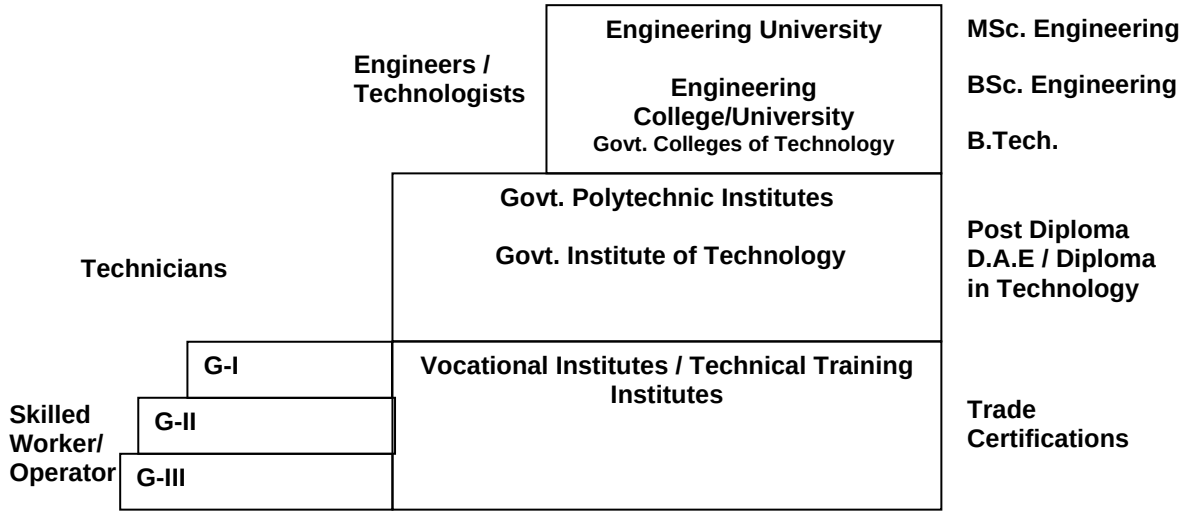
LABOUR MARKET

[Figure 5-1] Formal Education System and Labor Market



The engineering universities and colleges of technologies produce engineers and technologists which are professional engineers and technologists with graduate degrees and are included in the higher education system. The building blocks of TVET system can be seen from the following [Figure 5-2].

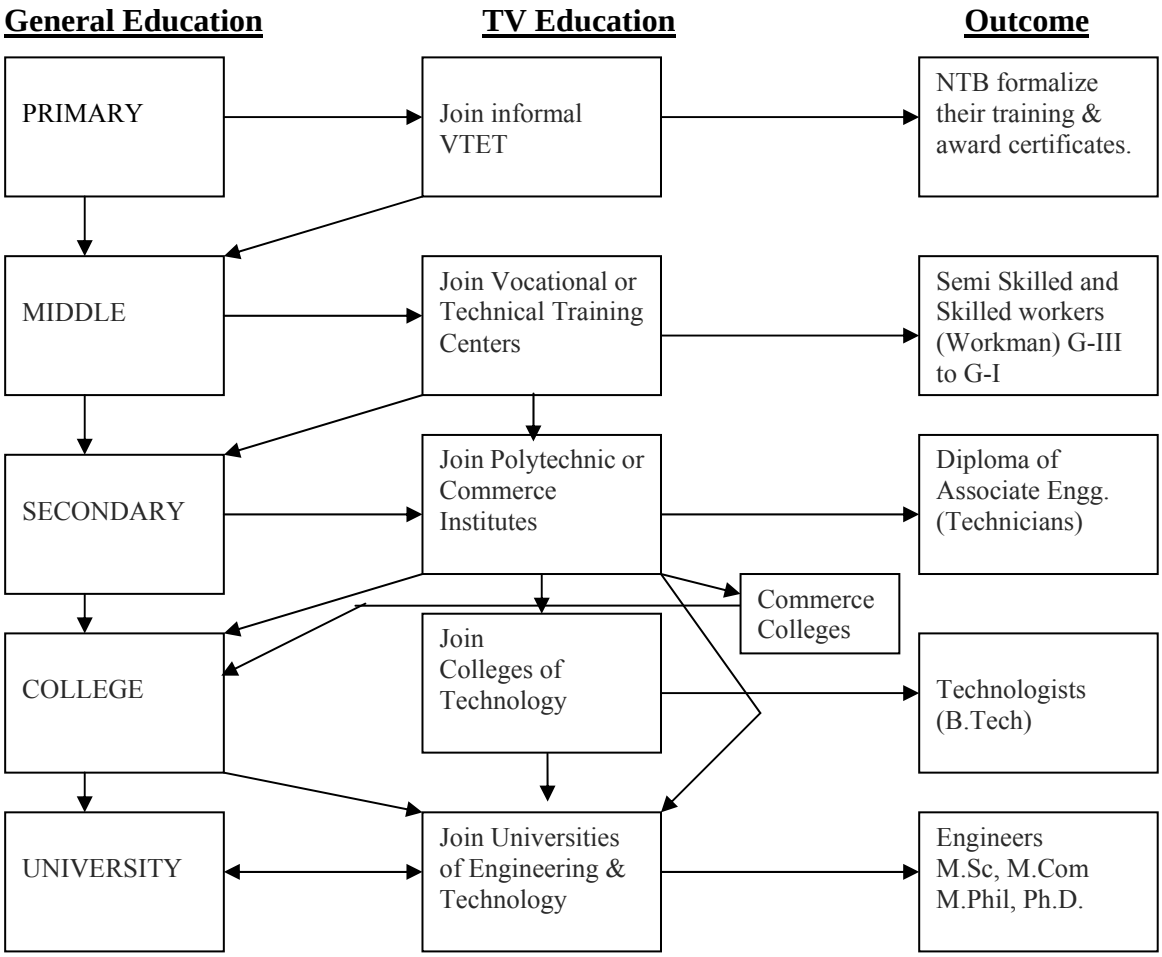
[Figure 5-2] The Building Block of TVET System



The students passing out middle schools(lower secondary) education (13+ age group) have the option of going for vocational education or secondary education and continuing further. This is the first turning point in the career of student to acquire vocational skills and join the job market or opt for further education. The number of students who opt for vocational education is very small as compared to the students who go for further education due to less social trend for work at this age level. This option however provides chance for the low income families to make their children an earning member of the family at an early stage. The second turning point in the career of student is completion of secondary schooling at the age of 15+. At this point the option is to go for technical education, commercial education and join for job market or continue for general education. The capacity as well was number of students opting for technical and commercial education is again very small as compared to the number of students opting for general education.

However it is not the case that once the students enter in vocational and technical stream cannot come back to general education and vice versa. There exists articulation arrangements at various levels and the credits are transferred and certificates are accepted to continue and pursue for further education of choices. The articulation arrangements between general and technical & vocational education and movement of students and options available can be understood from [Figure 5-3].

[Figure 5-3] Articulation arrangements between General and TVET and Outcome



The above diagram shows an apparent link and movement of students between general education and technical & vocational education but transfer of students from one stream to another is not very common. Those who join vocational training institutions after 8 years of formal schooling(middle schools leavers) end up with trade certificates of G-III level and rarely opt for general or further education. In their own field of training also, very few progresses to G-II level and almost non-existent progress to G-I level. Post secondary technical education is imparted in polytechnic institutes with a 3 years diploma in associate engineering program. The diploma of associate engineer students joins the labor market as technicians or may go for further education in govt. colleges of technologies. There are 17 colleges of technologies which offer 4 years of bachelor of technology degree courses to polytechnic diploma holders and produce technologists for the labor market. This is the highest degree in technical education.

The debate of placing TVET in secondary schools all over the world under the aegis of

UNESCO had also its impact on the Pakistan education system. The realization has grown that more students (of general education) are being pushed out of the school system without the necessary skills for employment and steps are needed to vocationalize secondary schools. The recent initiatives included introduction of vocational/ technical stream in 2000 secondary schools. The degree of success of this program however varies and need proper evaluation as the capacity and absorption of secondary schools with provision of labs, equipment and teaching staff has been the major impediments [2]

Ⅲ. Existing TVET capacity and output

The basic infrastructure of general and TVET education stated above is supported with the following number of institutions, enrolment at various levels.

<Table 5-1> Number of Educational Institutions, Enrolment, Teachers by Level

Level	Institutions	Enrolment	Teachers
Primary Schools	122,349	12,433,240	399,517
Middle Schools	38,449	6,652,870	313,797
Secondary Schools	25,090	9,473,525	418,376
Inter and degree colleges	1,882	1,158,489	59,097
Universities/ Degree Awarding Institutes (Including Private Sector)*	111	423,236	74,856
Technical/ Professional Colleges	1,324	361,534	30,334
Vocational/ Polytechnic	3,059	238,687	15,339

Source: Economic Survey of Pakistan 2006-07 (*Higher Edu. Commission Data)

The above table shows very small share of technical and vocational education as compared to general and higher education. The National Education Census(NEC) 2005 was conducted by the Ministry of Education and its allied departments with the main aim of getting a complete enumeration of all categories of educational institutions in the country within the public and private sector. It focused on gathering data on the level, type and management of the institutions, enrolment, teaching staff and their qualifications and training, non teaching staff, medium of

instruction, building and other facilities available and expenditures. The census covered 3059 vocational/ polytechnic institutions(916 public and 2143 private). It showed that 96% students were enrolled in general education while around 4%(238,687) were obtaining technical and vocational education [www.aepam.gov.pk].

1. Technical Education

The number of technical institutions as well as their enrolment has been increasing steadily over the past years. At present there are 101 polytechnic/ mono-technical institutes in the country in public sector of which 11 institutes are for women.

<Table 5-2> Province-wise Number of Technical Institutions

Province	GCT	GPIB	GPIW	Monotechnic	Total
Federal Area	0	0	1	0	1
Punjab	7	24	4	0	35
Sindh	4	12	4	30	50
Balochistan	1	0	1	0	2
NWFP	5	7	1	0	13
Total	17	43	11	30	101

Source: National Training Board, Islamabad, 2006
GCT: Govt. Colleges of Technologies
GIPB: Govt. Polytechnic Institutes for Boys
GPIW: Govt. Polytechnic Institutes for Women

The above institutions are managed by different departments in the provinces and their capacity as well number of trades being offered also varies. In 2006, the province-wise enrolment in these institutions ranges from 18,523 students in Sindh to 25,953 students in Punjab, 5,890 students in NWFP, and 440 students in Balochistan. For a country with a population of almost 160 million, the total number of 51,006 "technicians" in training per year is considered very low. A lot is to be done to provide greater access to technical education especially for women and to improve the quality of technical education at these polytechnic institutes. Technical education and training capacity in public sector is given in the following table.

<Table 5-3> Technical Education and Training Capacity in Public Sector

DEPARTMENTS	NO. OF INSTITUTIONS	TYPE OF COURSES	NO. OF TRADES	TRAINING CAPACITY
Technical Education & Vocational Training Authority(TEVTA) Punjab	35	Degree Courses in Engg. Technologies 3 year Diploma in Associate Engineers	21	25,953
Directorate of Technical Education Sindh	50	Degree Courses in Engg. Technologies 3 year Diploma in Associate Engineers	21	18,523
Directorate of Technical Education & Manpower Training NWFP	13	Degree Courses in Engg. Technologies 3 year Diploma in Associate Engineers	26	5,890
Directorate of Education Balochistan.	2	3 year Diploma in Associate Engineers	11	440
GPIW, Islamabad	1	3 year Diploma in Associate Engineers	5	200
TOTAL-	101			51,006

Source: National Training Board, 2006

2. Vocational Education

There was a narrow base of vocational training in Pakistan at the time of independence [1]. One training centre namely the Railway Training Center, Mughalpura Lahore had been in operation since 1908 for meeting skilled workers demand for the Railways. The other centre namely Technical Training Center, at the same place was established in 1941 to provide skilled craftsmen during the 2nd World War followed by the establishment of Technical Training Center, Gulberg in Lahore. The Technical Training Center, Peshawar, was also operational in 1941 primarily training workers for war material production in the ordinance factories. After the war, the center provided technical training to mobilize ex-military personnel. The vocational base grew steadily and with small industrial base, less needed skilled workforce and more trends to go for general education leading to a white collar job.

It gradually increased and at present the vocational training capacity has increased many fold within the public sector and private sector. The present vocational training institutions, types of courses they are offering, number of trades and capacity can be seen from the following tables.

<Table 5-4> Vocational training Capacity in Public Sector Institutions

DEPARTMENTS	NO. OF INSTITUTIONS	TYPE OF COURSES	NO. OF TRADES	TRAINING CAPACITY
Technical Education & Vocational Training Authority (TEVTA) Punjab	262	Short and long duration Vocational Training Courses.	76	30,862
Directorate of Manpower & Training, Sindh.	33	Short and long duration Vocational Training Courses.	32	4,242
Directorate of Technical Education & Manpower Training, NWFP	37	Short and long duration Vocational Training Courses.	32	4,456
Directorate of Manpower & Training, Balochistan	11	Short and long duration Vocational Training Courses.	21	1,649
Federal	2	Short and long duration Vocational Training Courses.	18	910
Apprenticeship Training	0	Long term courses (3 years)	123	10,000
TOTAL:-	345			52,119

Source: National Training Board Islamabad, 2006

In the private sector, the vocational training capacity is:

<Table 5-5> Vocational Training Capacity in Private Sector Institutions

DEPARTMENTS	NO. OF INSTITUTIONS	TYPE OF COURSES	TRAINING CAPACITY
Punjab Vocational Training Council	60	Short duration Vocational Training Courses	15,000
Skill Development Councils [6]	5	Short duration Vocational Training Courses	25,000
Private Institutes	374	Short duration Vocational Training Courses	50,000
TOTAL	439		90,000

Source: National Training Board Islamabad, 2006

The duration as well as entry qualifications for different vocational training programs vary widely. Training program range from few weeks to 2 years and entry qualifications vary from

middle to secondary school pass outs. The vocational courses are more practical oriented as compared to technical education. The curriculum of vocational comprise of 80% practical and 20% trade related theory. The pass outs are expected to perform semi-skilled and skilled jobs in various sectors or could go for self employment.

Ⅳ. Growth and Management of TVET System

Technical education has been managed by the Ministry of Education while vocational education has been under the administrative control of Ministry of Labor and Manpower and other related departments. The overall growth and management of TVET is given below.

1. Growth of TVET

After independence, the years 1947-1957 were considered a period of orientation and sensitization and nothing tangible was done for TVET education as these were the initial turbulent years of a newly established state. The history of Pakistan TVET System can be clustered into 5 main groups of about 10 to 13 years each wherein some work for the development of TVET has been done. A brief review of these five clusters is described below.

The period of 1957-1970 is seen as the **beginning of serious efforts** for the development of vocational training. The first initiative was the result of the Education Commission Report(1959), which called for providing technical education for improving skills and knowledge of the workforce to meet industrial requirements. Another major initiative during this period was the promulgation of the Apprenticeship Ordinance, 1962. Yet another step taken during this period(1962) was the establishment of Boards of Technical Education, which were the examining and accrediting bodies of technical as well as vocational education.

The period from 1969-79 witnessed an **era of experimentation and short term initiatives** to boost up technical and vocational education. During this period crash skills development programs were designed and implemented to meet the increasing demand for skilled workers

overseas. No wonder, had there been no large-scale migration of Pakistani workers to neighboring Arab countries, the approaches towards TVET would have not changed. Another major experiment was the transfer of the management of vocational training centers from the Education Department to the Manpower Training Directorates (of Labor Department) in 1979. The driving force behind this decision was to make training more job related and skills-biased. New approaches to vocational training developed by International Labor Organization-Modules of Employable Skills and the "standardization of skills" were also introduced during this era.

A **quantitative expansion** in vocational training took place during 1980-1990. Thirty-one training centers were established and a number of old ones were upgraded across the country. The Ministry of Youth Affairs established 20 Youth Vocational Centers. A major development in 1980 that has had a major impact on the development and expansion of vocational training was promulgation of National Training Ordinance in 1980 through which National Training Board and Provincial Training Boards were established[4][5].

The period of 1991 to 2000 onward marks **qualitative improvement** in technical and vocational education and training. It ushered initiation of women training programs in non-traditional trades, and closer involvement of employers in vocational training planning and administration. New vocational training centers for both male and female were established under the National Training Project. The National Institute of Science and Technical Education(NISTE) emerged as an institution at the national level to cater for futuristic needs of Science and Technical Education Teacher Training. A new project on Technical Education(TEP) was initiated with major components of up gradation of existing institutions, establishment of some new institutions including one for women, training of teachers, provision of equipment and development of teaching and learning resource material [7]. Another important milestone has been the establishment of Technical Education and Vocational Training Authority(TEVTA) in the province of Punjab in 1999.

The years 2000-2006 can be considered as **resurgence of technical and vocational education** with serious efforts at the national level. The establishment of national technical and

vocational training authorities mentioned in the past policy documents couldn't be realized until 2006. With the establishment of National Vocational & Technical Education Commission(NAVTEC) in 2006 and Technical Education and Vocational Training Authorities(TEVTAs) in the provinces of Punjab and Balochistan in 1999 and 2006 respectively, the Pakistan TVET System is now being revamped considerably. The expectations are high from these authorities due to top level commitment and resource allocations to achieve their objectives/ targets.

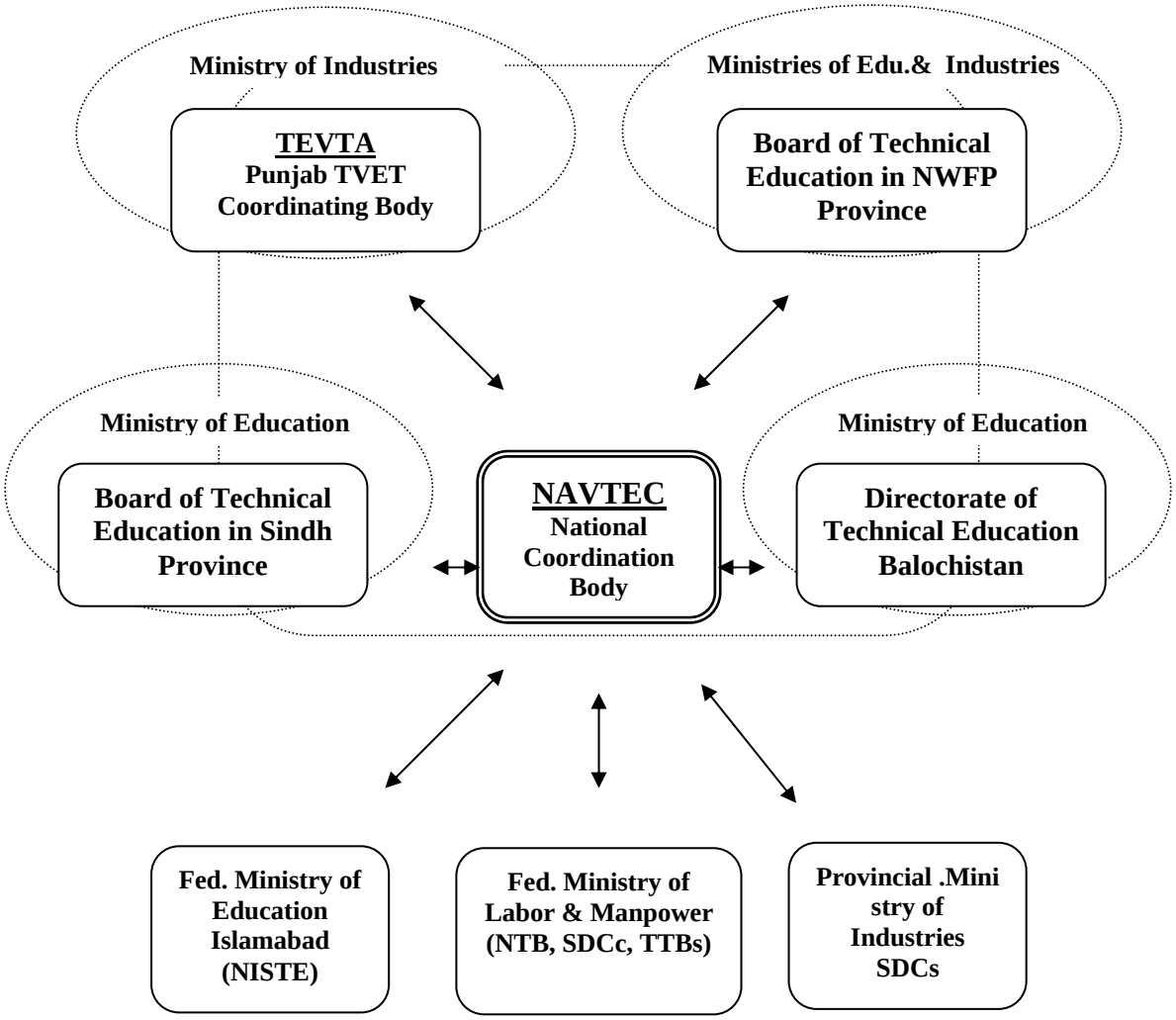
2. Management of TVET

The management of TVET has mainly been the responsibility of Ministry of Education and Ministry of Labor & Manpower at the federal as well as provincial levels. Since the Departments of Education in the provinces work independently and there had been no any single agency at the national level to coordinate the policies and standards, the management of TVET in Pakistan has not been efficient and effective as such. With this thinking, the autonomous authorities have been established to manage TVET in more coordinated and effective ways. The present province-wise system of management of TVET along with main ministries and departments involved is given below:

1) An autonomous authority namely Technical Education and Vocational Training Authority(TEVTA) in the province of **Punjab** is working under the administrative control of Ministry of Industries and looks after all matters related to TVET such as quality of training, accreditation, certification, registration and curriculum development. The Directorate and Board of Technical Education are under administrative control of TEVTA which are administrative and examining bodies.
2) The Board & Directorate of Technical Education & Manpower Training in the province of **Sindh** are responsible for all management matters of TVET. They are working under the administrative control of Ministry of Education.
3) The Board and Directorate of Technical Education & Manpower Training in the **North West Frontier Province(NWFP)** of Pakistan is under the administrative control of Ministry of Education with some involvement in purchase of equipment through Ministry of Industries, and are responsible for management of TVET.

4) The small section in the Directorate of Education in the province of **Balochistan** has long been responsible for management of technical and vocational education in the province. B-TEVTA has now been established in October 2006 to look after all TVET matters in the province.
5) **National Training Bureau**(NTB) Islamabad is working under the administrative control of Ministry of Labor & Manpower, Islamabad and its functions include development of occupational skill standards and conduction of vocational teacher training programs, apprenticeship programs and keep close liaison with industries and other agencies for training on skill standards development. The NTB has vocational Trade Testing Boards in each province to manage overall vocational education and look after vocational accreditation, affiliation and certification [6].
6) The **National Institute of Science and Technical Education(NISTE)** is working under the administrative control of Ministry of Education Islamabad and its main functions include in-service training of science and technical teachers, curriculum development in secondary science and technical education at the national level.
7) The **National Vocational and Technical Education Commission(NAVTEC)** established in 2006 works under the administrative control of Prime Minister of Pakistan with the main functions of development of policies and strategies related to HRD & capacity building in TVET, coordination and implementation of national training programs in coordination with all stake holders, development of occupational skill standards and development of internationally acceptable system of accreditation for TVET, among others.

[Figure 5-4] TVET Framework and related ministries and agencies with NAVTEC role



The management and implementation of TVET system has thus been taking turns with reduced roles of ministries of education, more involvement of ministries of labor and manpower and industries and creation of umbrella authorities to coordinate all work of TVET with involvement of the stake holders [11]. Hence TEVTA, B-TEVTA and NAVTEC have emerged over the past years at the provincial and national level agencies respectively.

As a result of establishment of these authorities, overall framework of coordination and implementation of TVET system in Pakistan is taking the above shape.

NAVTEC has thus now to play the pivotal and central role of coordinating all TVET related

activities in Pakistan and will act as the binding force and central point in bringing closer all the key players.

Ⅴ. Labor Force Survey 2005-06

The Pakistan Labor Force Survey(LFS) provides dimensions of country's labor force such as labor force participation rate, employment by major industries, employed labor force, unemployed labor and their categorization according to age, sex, areas, occupations and so on [8]. Some of the important statistics of Pakistan LFS 2005-06 is given in the tables below.

<Table 5-6> Trend in labor force participation(in %) rates by area and gender

1999-00	2001-02		2003-04	2005-06
i. Area based				
Overall	29.0	29.6	30.4	32.2
Rural	29.8	29.9	31.0	33.2
Urban	27.1	29.1	29.2	30.2
ii. Gender based				
Male	70.4	70.3	70.6	72.0
Female	13.7	14.4	15.9	18.9

Source: Labor Force Survey 2005-06

The labor force participation rate has ascended significantly from 30.4% in 2003-04 to 32.2% in 2005-06(<Table 5-6>). It is more for rural and women than urban and men. It indicates the uplift of women through various Govt. and NGO initiatives and rural uplift through the national rural support program [7]. The Govt. initiatives also include measures taken under the commitment to reduce poverty as per targets of UN Millennium Development Goals.

The employment status is dominated as employees (37.3%) followed by self employed and unpaid family workers(<Table 5-7>). The reduction of percentage in self employed worker reflects weaker system support to encourage people to set up their own businesses. In overall the total entrepreneurial activity(TEA) of Pakistan as reported to be as low as 5 by the Global

Entrepreneurship Monitoring as compared to other courtiers of the region like India and Thailand where TEA is more than 30.

<Table 5-7> Trend in Employment Status

Employment Status	2003-04	2005-06
Employer	0.9	0.9
Self employed	37.1	34.9
Unpaid Family Workers	24.1	26.9
Employees	37.9	37.3
Total	100	100

Source: Labor Force Survey 2005-06

The employment by major industries exhibits share of agriculture and allied activities(43.4%) in 2005-06 higher than that of 2003-04(43.1%)(<Table 5-8>). Male employment recedes a bit while female's climb 2% up. As for non agriculture, manufacturing and construction scale up. Other activities nigh equivalently. Apparently, employability of secondary and tertiary activities is generally in rise.

<Table 5-8> Employed Labor Force by Major Industry Divisions (%)

Major Industry Divisions	2003-04	2005-06
Agriculture	43.1	43.4
Manufacturing	13.7	13.8
Construction	5.8	6.1
Wholesale and Retail Trade	14.8	14.7
Transport & Communication	5.7	5.7
Community & Social Services	15.0	14.4
Others	1.9	1.9
Total	100	100.0

Source: Labor Force Survey 2005-06

Major labor force is concentrated in skilled agriculture and fishery activities and still rising (34.9% Vs 35.3%)(<Table 5-9>). In rest of the occupation the labor force participation rate has not much changed over the past 3 years.

<Table 5-9> Employed Labor Forces by Major Occupational Groups (%)

Major Occupational Groups	2003-04	2005-06
Legislators & Managers	11.5	12.0
Professionals	2.0	1.7
Technicians	4.9	5.1
Clerks	1.6	1.4
Service & Sale Workers	5.2	5.4
Skilled Agricultural and fishery workers	34.9	35.3
Craft workers	15.9	15.8
Plant operators	3.7	4.1
Elementary (unskilled) occupations	20.3	19.2
Total	100	100

Source: Labor Force Survey 2005-06

The overall unemployment rate decreased from 7.7% in 2003-04 to 6.2% in 2005-06, steeper for women(13% Vs 9%) than men(6.6% Vs 5.4%) even across the areas(<Table 5-10>). Age specific rates for teens to early fifties experience decline, again more for women than men. The rates for latter fifties and beyond scale up however, due to men exclusively.

<Table 5-10> Unemployment by Level of Literacy/Education(%)

Literacy/Level of Education	2003-04	2005-06
Literacy		
Illiterate	40.8	43.8
Literate	59.2	56.2
Level of Education		
Non formal Education	0.6	0.3
Formal Education	58.6	55.9
Pre-metric	29.5	29.0
Matric but below intermediate	16.18	14.8
Intermediate but below degree	6.39	5.9
Degree, post graduate & PhD	6.5	6.3
Total	100	100

Source: Labor Force Survey 2005-06

The big chunk of unemployed resides in the group of literate and those people who have only formal education. It reflects the need for absorption of these unemployed in the vocational system by imparting some kind of vocational or technical skill and enabling them to enter to the job market or providing them necessary entrepreneurial skill to opt for self employment.

Ⅵ. Recent Policy Initiatives and Programs

The period 1990 onward, especially 2000 to 2006 have been the period of qualitative improvement and resurgence of TVET sector. However, despite policy provisions, the major impediment has been the inadequate financial allocations for education. The following table (<Table 5-11>) shows the past 7 years expenditures on education as % of GDP.

<Table 5-11> Expenditure on Education as % of GDP

Year	Expenditures on education as % of GDP
2000-01	1.82%
2001-02	1.79
2002-03	1.86
2003-04	2.20
2004-05	2.13
2005-06	1.92
2006-07	2.42

Source: Economic Survey of Pakistan 2006-07

Regardless of financial constraints, the government policy documents show an upward trend in the realization of the importance of TVET education and propose plans and strategies for strengthening and uplifting TVET education. Some initiatives of the policy documents are reviewed below.

1. Ten Year Perspective Development Plan 2001-11

The Ten Year Perspective Development Plan 2001-11(The Plan) was approved at the National Economic Council meeting chaired by the President and the then Chief Executive of Pakistan on 7 June 2001. The Plan identifies seven key objectives; (i) accelerating GDP growth, reduce unemployment, and alleviate poverty, (ii) financing growth increasingly by Pakistan's own resources, (iii) government to improve its income-expenditure configuration to contain domestic borrowing, (iv) private sector to transform a larger proportion of its saving into foreign exchange through exports to contain external borrowing, (v) improvement in competitiveness by promoting productivity, efficiency, and quality, (vi) build human capital

base for long-term , self-reliant growth, and (vii) institutionalize social capital conducive to sustainable development.

The Plan envisages a four-pronged attack on poverty; (i) increase economic opportunities for the poor, (ii) their empowerment, (iii) access to physical and social assets, and (iv) access to welfare and support through the development of appropriate social safety nets.

For the education sector the Plan encompasses the following objectives: (i) improvement of literacy rate, (ii) Education For All. (iii) improvement in participation rate at secondary level, (iv) producing higher education graduates responsive to the socio-economic and technical needs of the country, and (v) quality of education.

The Plan recognizes that there are "limited options for technical/ commercial/ vocational education" for the population. The strategies to deal with these issues are to (i) introduce technical/vocational stream in secondary schools and (ii) establish polytechnics at district and vocational institutes at Tehsil levels. The operational program and targets include provision of "technical education projects", establishment of 90 polytechnics by 2011, introduction of evening shift in 100 polytechnics, and opening technical streams in 2,000 secondary schools(5 in each Tehsil).

2. National Education Policy(1998-2010)

The present National Education Policy(NEP, 1998-2010) is one of the main policy documents which emphasizes for qualitative improvement and quantitative expansion, strengthening and consolidation of the existing technical and vocational education facilities. The policy aims at improving the quality of technical education in order to enhance the employability of TVE graduates by moving from a static, supply drive system to a demand driven system, capable of reacting efficiently to the labor market needs and opportunities. It also aims at introduction of new technologies to meet the growing demand for technical manpower at the middle level. It provided for establishment of a National Council for Technical Education to regulate technical education and to coordinate efforts of various

departments/organizations at the national level besides other measures in curriculum revision and teachers training. NAVTEC is the outcome of this particular recommendation [3].

3. Education Sector Reforms(ESR) Action Plan 2001-2005(Extended up to 2010)

The Education Sector Reforms(ESR) Action Plan 2001-2005 and now extended up to 2010, was initiated by the Federal Education Minister who convened an inter-Provincial Ministerial Meeting in December 1999. In January 2000 an Education Advisory Board, headed by Federal Education Minister, was constituted at the national level to look at various sub-sectors of education in a sector-wide perspective. The mandate of the Board was to review policy trends for education from 1947 through to present day and to develop an Action Plan for implementing the National Education Policy 1998-2010. The ESR Action Plan was subsequently presented to the Chief Executive of Pakistan on 10 July 2000: Afterwards, the Action Plan went through a series of consultations with over 600 partners/stakeholders including the Governors of the four Provinces, Federal Minister of Finance and Deputy Chairman Planning Commission. Provincial "Ministers for Education, Literacy, and Finance, Provincial Departments of Education and Planning & Development. NGOs, Private Sector, and donors and development partners. The ESR Action Plan was discussed with Donor Agencies, Development Financial Institutions, and International NGOs on 7 September 2000. The donors and development partners which participated in the forum included the world Bank Multi-Donor Support Unit, ADB, JBIC. British Council, the European Commission. DFID, CIDA. UN Agencies; UNESCO, UN1CEF, UNDP, and UNFPA. JICA, GTZ. NORAD, the Asia Foundation. World Food Program, Action Aid Pakistan, and Save the Children Fund-UK.

The key directions and implementation strategies proposed in the ESR Action Plan were approved by the Chief Executive of Pakistan on 31 October 2000. The document titled" Education Sector Reforms Action Plan 2001-2005" has since served as the "Road Map" for the development of the education sector in Pakistan as well as a major reference for donors and development partners involved in providing support for education in the country.

The ESR Action Plan sets five education reforms objectives two of which are directly related

to technical education:

i) Introducing a third stream of gender and area specific technical and vocational education at secondary level with innovative approaches for student counseling.
ii) Setting up monotechnics/polytechnics at District and Tehsil levels.

The ESR Action Plan also sets targets for 11 sub-sectors for 2005 as against the bench mark in 2001. Four sub-sectors are concerned with technical education:

- Increase number of technical stream schools from 100 in 2001 to 1,100.
- Increase the number of polytechnics/monotechnics from 77 to 160.
- Increase public-private partnerships from 200 to 26.000.
- Implement quality assurance system to ensure equivalence of all sub-sectors to international levels.

The targets set by ESR have so far been partially met due to delayed implementations and financial stringencies.

4. The Mid-Term Development Framework(MTDF) 2005-10; Policies and Strategies

MTDF plans to achieve the targets set under Millennium Development Goals(MDGs) for Universal Primary Education(UPE), literacy, and promotion of gender equality and empowerment(Gender Parity Index, GPI).

One of the major directions of MTDF was launching of a major skill based program for the potential age group 15-24 years to enable them alternative pathways through schools and colleges. The focus was provision of science laboratories and computer education in every school to help balance the ratio between Arts and Science streams, and introduction of technology education / technical stream as a core subject at secondary level. Finally major focus was on teacher training for science laboratories and technical streams in schools. The targets set under MTDF are given below(<Table 5-12>).

<Table 5-12> Proposed Major Programs for TVET sector under MTDF 2005-2010

Sr. No.	Programs	2005-06	2006-07	2007-08	2008-09	2009-10
1	Opening of 50 Polytechnics	10	10	10	10	10
2	Induction of Technical Stream in 2000 existing Secondary schools	400	400	400	400	400
3	Establish 75 Commercial Training Institutes	15	15	15	15	15
4	Establish 75 Vocational Training Institutes	15	15	15	15	15

Source: Medium Term Development Framework, Planning Commission of Pakistan - 2005

Ⅶ. Future Trends and Prospects

All these policy documents work coherently and supplement each other under different provisions. Some of the important reforms/ projects in TVET sub-sector initiated in line with the above policy provisions that show the future trends and prospects in human resource development are described below.

1. Annual Plan Review 2006-07

An allocation of Rs1136.8 million was made in Public Sector Development Program(PSDP 2006-07) for 12 projects which were reduced in the 3rd Quarter Review of PSDP 2006-07 to Rs634.8 million. Against the release of 103.61 million up to 3rdQuarter, Rs 62.76 million was utilized. An amount of Rs. 198.4 million has been allocated in the PSDP 2007-08 for 14 projects including on-going program. Some of the selected on-going and new initiatives are as follows:

- Construction of Auditorium for Pakistan Manpower Institute at Islamabad.
- Consolidation and Development of Labor Market Information System(LMIS) & Analysis.
- Training for Trainers for Skill Development.
- Computerization of the data of outgoing emigrants and returning migrants.

The projects will help to fill the gap in the area of technical training as well as labor market information. The latter will contribute to more effective and focused policy planning in the labor & employment sector.

2. Technical/Vocational Training Initiatives

There is increasing evidence that the country is beginning to experience a serious skills gap. National Vocational & Technical Education Commission(NAVTEC) has been assigned to inter-alia

- Devise and review policies and evolve strategy relating to human resource development with a focus on technical education, vocational training and employment in general.
- Facilitate skill development and employment generation through enhancement of public private partnership.
- Improve quality of training of instructors through skill upgradation program.
- Establish an internationally acceptable system of accreditation for technical education and vocational training.
- Suggest innovative program for promotion of technical education and vocational training among females, and neglected sections of society.

The Prime Minister vision for NAVTEC was *"to develop a technical education and vocational training system to produce 1.0 million appropriately skilled workforce annually by 2010"* [9]. The target for 2007 was training of 100,000 trainees in 8 major sectors namely; hospitality, construction, skills for women, paramedics, agriculture(Dairy & Livestock), IT and Telecommunication, Light Engineering and services & others. The future sectors include oil & gas, textile and child care. The target for 2008 is training of further 200,000 skilled workers by bringing TVET at the lowest administrative unit level(Tehsil) and also by involving the private sector training providers [10]. The future tasks of NAVTEC include development of skill standards, and on the basis of that development of competency based curriculum. The quality assurance through national TVET accreditation & certification system and popularization of technical and vocational education through media campaign are also among the future agenda. NAVTEC especially plans to involve private sector to achieve MTDF targets and Prime Minister's target of achieving the technical and vocational education total capacity of 1.0

million trainees annually by the year 2010.

3. Labor Market Information System & Analysis

The main focus of the MTDF is the generation of the sustained, decent and productive employment opportunities by raising productivity and technical competence of the work force. In this respect the information and analysis is needed on key labor market indicators for important insight and development of appropriate policies and remedial measures. Realizing the fact, a project namely "Establishment of Labor Market Information and Analysis" has been launched by Ministry of labor. This project cross-cuts the three pillars of the MTDF employment strategy and will contribute to understanding of the labor market dynamics and its various characteristics in order for improved policy formation for employment generation, employee protection and employee enhancement.

The main objective of the project is to develop and consolidate the collection and usage of labor market information in Pakistan. It is a pre-requisite for effective program for employment promotion and manpower planning and development. In this regard the "Labor Market Information and Analysis" project is intended to develop an institutional mechanism that will monitor and report labor market developments at district, provincial and national levels. The quantitative as well as qualitative information will be collected, analyzed and disseminated regarding current labor market situation, the skill requirements for future trends and outlooks in labor market.

4. Employment Projections 2007-08

Eradication of unemployment stands high on economic agenda of the Government. Sustaining and accelerating the current growth of GDP in the coming fiscal years would undoubtedly generate employment opportunities and prove helpful in eradicating unemployment menace. Employment projections for the next fiscal year are given in <Table 5-13>.

<Table 5-13> Employment Projections(Million)

Year	Population	Labour Force	Employed Labour Force	Unemployed Labour Force	Unemployment Rate(%)
2006-07	159.26	51.33	48.15	3. 18	6.2
2007-08	162.00*	52.16	48.93	3.23	6.2

*Projection is estimated using 1.78 percent growth rate.

Ⅷ. Conclusions

With the establishment of national and provincial technical and vocational education commissions and authorities and the involvement and supervision of the top management, the Human Resource Development efforts are on the right track for the first time in the history of Pakistan. The two-track course of action with short training programs in promising trades and medium and long term training programs by NAVTEC are likely to produce tangible results in HRD in the coming years. The national TVET strategy titled "Skilling Pakistan" 2008-2012 is first good step to start with followed by the development of national qualification framework, skill standards and competency based curriculum. NAVTEC targets to train 200,000 trainees in 2008 and increase the marketability of Pakistani workforce through quality of the training. Besides strengthening the local infrastructure to produce skilled labor workforce with involvement of private sector, there is need to develop and maintain a comprehensive labor market survey so as to match the output of the institutions with the demand of the local and foreign industry. The survey should also include implications of labor force movement across the border and its social and cultural implications. Some of the national HRD trends are:

a. The overall literacy rate(10 years & above) was 45% in 2001 which has increased to 54% in 2005-06. Female literacy percent increased more as compared to male literacy rate, though gender gap still persists in access to education. It shows the availability of more literate skilled workforce in the coming years.

b. The percentage of children aged 10-18 that left before completing primary level has decreased from 15% in 2001 to 10% in 2005. This underlines the government efforts to

improve the access and quality of education as well as need to expand intake in the secondary and vocational schools. More vocational institutions are needed to accommodate primary, middle and secondary pass outs.

c. Despite government promises to double education budget to 4% of GDP, it has remained under 3% for the past 5 years. The major absorbent of educational budget increase have been the primary and higher education. However it doesn't include other initiatives in TVET sector and allocation of budget to now autonomous agencies like NAVTEC and TEVTAs. With inclusion and full activation of provincial TVET authorities, the % share of TVET in GDP would increase.

d. The MTDF(2005-2010) projects an increase of 6.97 million jobs from 43.15 million in 2004-05 to 50.12 million in 2009-10. As per the labor force of 2005-06, the employed labor force stands at 46.94 million. Thus 3.18 million jobs need to be created in the next four years to achieve the targets of MTDF(2005-2010). In view of envisaged GDP growth and enhanced PSDP allocations, the target is easily achievable and decline in unemployment rate to 4 percent is possible. Reforms and expansion of vocational and technical training will further enhance the productivity of the employed labor force.

e. The employment permit system of Korea recently started is likely to have success in Pakistan as it is not only better structured but also has been initiated in a planned manner with the involvement of government agencies.

Abstract

The TVET System in Pakistan which is the main producer of skilled workforce, has slowly been progressing over the past decade. Despite several initiatives to enliven TVET system, its speed remained slow and projects and programs have not much impact as compared to the needs and requirements of producing skilled manpower for local and foreign labor markets. The establishment of national technical and vocational training authorities mentioned in the past policy documents couldn't be realized until 2006. With the establishment of National Vocational & Technical Education Commission(NAVTEC) in 2006 and Technical Education

and Vocational Training Authorities(TEVTAs) in the provinces of Punjab and Balochistan in 1999 and 2006 respectively, the Pakistan TVET System is being revamped considerably. The expectations are high from these authorities due to top level commitment and resource allocations to achieve their objectives/ targets.

This paper presents the management, implementation and growth of TVET system in Pakistan in view of the recent HRD trends, policy initiatives of the government, the need to satisfy local labor market demands and workforce mobility across the border.

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Chapter 6

Human Resource Trend in Bhutan

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Ⅰ. Introduction

Bhutan is landlocked between the two giant and populous nation of China and India. It is bounded by China in the north and north-west while rest of the country is surrounded by India. Only 38,395 square kilometers in extent, the Kingdom has recorded a total population of 634,982 (2005 census) out of which 53% is male (111 males per 100 female). The economy is based on agriculture, forestry and hydropower which provide the main livelihood for the population and account for about half of the gross domestic product. Bhutan's GDP per capita is US$ 1969 (UNDP HDI Report 2006) and ranked 135th in the Human Development Index in the Human Development Report 2006 of UNDP.

Bhutan is becoming increasingly known for its pure practice of Mahayana Buddhism, its untouched culture, its pristine ecology and wildlife, and unparalleled scenic beauty of its majestic peaks and lush valleys with an altitude varying from 180 meters to 7550 meters above sea level.

The Kingdom of Bhutan is set to emerge as a parliamentary democracy with a constitutional monarchy on top. The stage has been set for the parliamentary elections early next year as well as enthronement of 5th King.

The socio-economic development initiated in 1965 through Five Year Plans has propelled Bhutan into an era of modernization, socio-economic growth, prosperity and happiness. Bhutan is now on the threshold of the 10th Five Year Plan due to begin from 2008 with the formation of

new government under the parliamentary democracy.

Ⅱ. HRD Perspective in Bhutan

Human Resource Development is the principal asset and the main vehicle for economic and social progress and it is also the foundation for the Kingdom's drive for modernization. Thousands of graduates are graduating from the various education system and these are the fruits of the initiatives and consistent emphasis placed on HRD by the Government.

While Bhutan continues to experience rapid growth, it is a much different country than it was when the social economic development initiated about four decades ago. One major area of substantial change has been Bhutan's human resources market. Bhutan opened to the world only three decades ago and Foreign Direct Investment was opened only recently. Few foreign companies already entered Bhutan in the service industry sector and as Bhutan's dynamic private sector steps up to catch up with the rest of the world, demand for skilled workers are growing.

Bhutan's free and more access to education system have led to growing numbers of entry-level white-collar workers and there are continuing shortages of blue collar workers. The most serious and most commonly cited constraint, as indicated in the 9th Five Year plan as well as in the **Private Sector Survey 2001,** on the development of the private sectors is the lack of skilled labor. Country is heavily dependent on the imported skilled and unskilled labor and the way in which these issues develop is seen to have a large impact on any firm looking to expand or get involved in Bhutan if Human Resource[HR] functions that are facing do not focus their efforts on re-positioning their services to deliver enhanced people performance.

The corporate and private sectors are characterized by a small number of medium sized enterprises, and a large number of small ones. Bhutan's entrepreneurial culture and financial markets are still largely undeveloped fuelled by small domestic market. Employees are reluctant to seek employment opportunities in the private sectors.

The Royal Government has drawn up the Human Resource Master plan directing towards ensuring an increase in the quality and quantity of trained men and women for the future development of the HR sectors. The output of trained people represents an investment for the future to ensure that the public, private and corporate sectors have access to the skilled workers and managers they require.

Human Resource Development guideline outlined in the Bhutan 2020 emphasizes on the Human Resources in development. Private sector development will have to put into place to attract young people to take up jobs in the private and corporate sector. Human resource development issues focus on the lack of skilled personnel in critical areas leading to reliance on foreign workers, particularly in the private sector.

The Kingdom's future development is closely related to human resource development for the private and corporate sectors. If these sectors are to play an increasingly important role in employment generation, poverty alleviation, and improved quality of life for the country as a whole, they must have access to the required quantity and quality of human resources. This must go on beyond previous approaches to human resource development that have focused on the supply side of the labor market. It is necessary to consider the demand side of the market as the way forward in addressing the current supply demand mismatch.

The number of private and corporate sector jobs is estimated at about 50000 with very large number of these held by foreign workers. Employment growth rate for most of the enterprises worked out to be about 15% annually which is very low in relation to the number of job seekers increasing exponentially. This rate of growth is not sufficient to absorb all new entrants to the labor market and under-pins the need for an enabling environment to allow the sector to grow more rapidly. Gist of that enabling environment is to ensure that the private and corporate sectors have access to suitably qualified and skilled workers and managers, and those managers and workers already in position are adequately trained to enable them to perform to an acceptable level.

In spite of reporting that the lack of skilled workers is the biggest problem, Bhutanese

enterprises invest very little in training for their workers and managers. They are completely dependent on the government's resources for HR development. The managers do not understand the importance of skill upgrading and do not know how to assess training needs in relation to productivity improvement. Since the corporate and private sector is not prepared to make such investment in HR development, the Royal government has committed to do so, at least in the short term.

Royal government's action in supporting human resource development in the respective sectors will have important spillover effects for society as a whole. Trained workers, even if they do move from one enterprise to another, take their skills with them. In addition, training provided by one enterprise can have useful demonstration effect for other enterprises, and training raises product quality thereby benefiting consumers.

Ⅲ. Fund Allocation for HRD

The Royal government realized the HRD as the main driving force for socio economic development and has accorded the high priority and during the 9th Five Year Plan period(2002-2007) a sum of Nu. 3000 million(US $ 80 million) has been allocated for the Human Resource Development. Government has taken a lead role in human resource development planning for the corporate and the private sector and generously supported the HRD of these sectors. The corporate and private sectors are too young to invest in the training of its workers and managers and the Royal Government is prepared to offset some of the cost through its support. The Royal government during the 9th Five Year Plan(2002-2007) has taken yet another initiative by separating the HRD of the corporate and private sectors from that of civil service and allocated Nu. 1500 million(US$ 40 million) for the HRD of the corporate and private sector.

Ⅳ. National Human Resources: Supply Considerations

The Kingdom has a workforce of approximately 230100 as per the 2006 Labor Force Survey

and the country faces the paradox of many job vacancies and rising unemployment. Although the current unemployment rate is 3.2%, it is largely confined to school leavers thus giving rise to a potential problem of youth unemployment. Employment opportunities exist, but job seekers are unable or unwilling to take up available jobs. Employers have skill requirements that Bhutanese job seekers do not meet. The current unemployment problem, therefore, is a result of skills mismatch rather than a lack of employment opportunities. The supply side of nation's labor markets shows a significant under supply of skilled nationals, and a significant over supply of unskilled workers. This has resulted in a heavy reliance on skilled and semi skilled foreign workers to overcome the domestic supply problems.

On the other hand, about 50000 school leavers are expected to enter the labor market during the period 2002-2007 which will increase to 100,000 by 2010. Considering the number of foreign workers currently employed in the country, any threat of unemployment could be removed simply by replacing foreign workers with Bhutanese. This will however, not happen overnight because Bhutanese workers lack the required skills and, in some cases, are not prepared to do the type of work undertaken by foreign workers.

The oversupply situation is also affected by the limited growth of the private and corporate sectors which has prevented the sectors from generating sufficient new jobs. This is more than a human resource mismatch problem and reflects a need to consider the economic and financial policies required to stimulate growth to the required level.

Ⅴ. Supply Source of Human Resource

Education and training since the start of planned socio-economic development has been accorded high priority by the Royal Government in the early 1960s, the country had 11 primary schools with less than 500 students. The first batch of 20 students completed high school in 1968. The country now has 245 community primary schools, 104 primary schools, 84 lower secondary schools, 28 middle secondary schools, 28 higher secondary schools (including 7 private higher secondary schools), 9 tertiary education institutes and, 6 vocational training

institutes. The education and training system has a current enrollment of some 190000 which accounts for around 30% of the Bhutanese population.

The development of the nation's education and training system has been remarkable but that success has now generated a new set of problems. What is to be done with students as they leave the school system? They can enter an in-country training institute, enter an out-of-country training institute, find a job, or enter the ranks of the unemployed.

The annual intake capacity of the training institutes is just over 2000. This means that many suitable candidates are unable to be placed. Likewise overseas long duration courses are dependent on the availability of funds. The skilled workers produced by the training institutes in the country could not meet even 10% of the demand. The in-country training institutions have limited capacity to absorb all those seek a place. In time, of course, the number of vocational training places in the country will increase but, clearly, the problem of over-supply will persist for some time. Efforts to improve supply of human resources for the public, private and corporate sectors in future years can benefit from an examination of experiences under earlier developmental plans.

There are number of lessons to learn from earlier developmental plans concerning human resource development for the private and corporate sectors as enlisted below.

- There was total dependence on the Royal Government to finance the private and corporate sectors HRD plan.
- There was an insufficient fund to implement the plan.
- There was a lack of qualified personnel in the sectors to fill the training vacancies.
- There was a lack of a comprehensive HRD plan for the private and corporate sectors.
- Training needs of enterprises were not assessed in relation to their objectives.
- The importance of investment in human capital was not fully understood by the private and corporate sector enterprises.
- There was a lack of proper coordination amongst stakeholders.
- The availability and easy access to 'ready-made' foreign workers resulted in a low commitment to training by enterprises.

Ⅵ. National Human Resources: Demand Considerations

The **Bhutan 2020** document identifies the need to develop a comprehensive long-term human resource development plan for the Kingdom. In the past, HRD plans have been formulated based on the requests of agencies and some enterprises, not based on enterprise performance objectives. Although some attempts were made to conduct HRD needs assessment, these efforts were constrained by the lack of resources. The private and corporate sectors did not have the capacity itself to undertake needs assessments and the preparation of training plans and, thus, the planning process was not really needs-driven.

The objective of the 9th Five Year Plan requires attention to the following.

- National development requires that all sectors, not only private and corporate sectors, have access to the human resource they require.
- The private sector should develop its capacity to contribute more to the growth of the economy.
- The skills of the labor force need to be continuously up-graded through pre-service and in-service training/development programs.
- Reduce the current and future mismatch between demand and supply of human resources.
- Establish a continuous system and procedures for prioritizing human resource development programs.

For the first time the Royal Government has taken a decision that the HRD Master Plan for the Civil Service and Private and Corporate Sectors should be prepared separately. The need for each sector was assessed in relation to its expected future growth and development, and the identified competency gaps in each sector.

However, I see that the preparation and implementation of the actual needs to guide the achievement of national and sector human resource development objectives must be guided by a number of operational strategies as suggested below;

- *Planning for HRD should be done on an integrated and inter sectoral basis.*
- *There should be improved coordination between the Ministry of Education, Ministry of Labor and Human Resources, the Royal Civil Service Commission and all the stakeholders.*
- *The HRD resources of the country should be used for the benefit of the maximum number of citizens of the country, particularly the school leavers whose main dreams are to secure gainful employment.*
- *Institutional strengthening and capacity building activities for both training providers and users of human resources must be undertaken on a continuous basis.*
- *Human resource development planning capacity must be encouraged and become an integral part of the overall economic development planning process.*

Ⅶ. Human Resource Planning: Responding to Needs

The Royal Government has allocated Nu. 3000 million(US $ 40 million) during the 9th Five Year Plan period out of which 50% is allocated for the corporate and private sector's HRD according to their needs. The needs of the private and corporate sectors are to be addressed under the Human Resource Development Master Plan by making available the training slots according to their assessed needs. The response to the needs of the HRD is envisaged to be met predominantly through in-country training activities of a customized nature to address competency gaps in the various sectors. The emphasis on the in-country training is also mainly due to cost effectiveness, relevance of the course and the capacity of the institutes to deliver the courses.

Taking into considerations the experiences of 9th Five Year plan, the HRD plans for 10th Five Year Plan is expected to be based on the assessment of the needs for sectors rather than individual enterprises. It should not be a human resource forecast but, rather, a broad indication of the emerging HRD needs of the private and corporate sectors.

HRD implementation strategy has drawn up holistically to bridge the gap between demand

and supply with emphasis on striving balance between in-country and ex-country training, with a bias towards in-country training on the ground of cost and the opportunity it provides to deliver customized activities related as closely as possible to competency gas. The biggest short term impact of the planned HRD activities is expected to come from short, in-country, customized training directed specifically to addressing the shortcomings of private and corporate sector managers.

Ⅷ. White-Collar Workers in Bhutan

Bhutan's HR market is seen to be comfortable and promising for those firms looking to employ office or rather white collar workers. There is a substantial difference in the prospect of graduates depending on their major and work experience. The number of graduates entering job market is increasing and stiff competition for jobs has led the employers for better selection of employee.

Two decades ago very few Bhutanese received university education and remaining had to settle down to enter into the job market. In the following decades the number of Bhutanese people receiving university education has increased substantially. With only one college offering degree program till 2003 most of the students studied in the foreign country. This increase of students completing university education indicates that the white collar worker is significantly educated than just few years ago. It also means that the competition for white collar jobs is much fiercer.

Considering the rapid growth of Bhutan's economy the unemployment rate of university graduates is negligible at the moment but the economic growth might be overtaken by the growth in higher education which might result in the imbalance between job seeker and job market. The mismatch in the expectation of job seekers and employers could add to the unemployment ratio in the subsequent years to come.

Bhutan opened to the world in inviting Foreign Direct Investment(FDI), and with the entry of

foreign companies it is expected to increase the job market yet slimming down in the civil service could further aggravate the unemployment situation in Bhutan and university education used to mean a guaranteed high level job after graduation. Lately, Bhutan began emphasizing on technical and vocational education to firstly provide skills to the school leavers for gainful employment and secondly to replace the foreign workers in the country. Even with the establishment of Royal University of Bhutan offering diversified program there is drastic shortage of engineering personnel at all levels.

The expansion in higher education in Bhutan and the relative lack of jobs means that companies have a large pool of qualified entry-level candidates from which to choose

Ⅸ. Blue-Collar Workers in Bhutan

The country has undergone a great deal of transformation since it embarked upon a planned socio-economic development program in 1961. The transformation process made unprecedented demands for trained workers. Thus, the initial Five-Year Plans focused mainly on the infrastructure development and human resource development. Despite these efforts, the country continues to face shortage of skilled workers. The presence of over 50,000 expatriate workers in the country is clear indication of human resource shortage still being faced by the country.

With the number of school leavers after 10^{th} and 12^{th} grade surpassing the white collar jobs available in the market, students choosing to join the TVET sector are drastically increasing. The TVET institutions needs to be strengthened if they are to play an increasingly important role in alleviating shortage of human resource needs as well as providing skills to the youth which ultimately translates into poverty alleviation and improved quality of life for the country as a whole.

Currently the civil service and corporate sectors who offers better remuneration and working conditions have been more successful in recruiting and retaining blue collar workers. Some of

the well established industries and lately entered MNCs have been successful in attracting these workers by offering perks and increasing worker satisfaction.

Ⅹ. Constraints and Issues

A number of constraints and issues are foreseen in human resource development of our country but the following prominent issues should be addressed.

- There is a lack of human resource development professionals in all the sectors, but particularly in the private sector, to support the implementation of plans and programs.
- There is a need to monitor the implementation of the program on an on-going basis in order to assess problems and provide early warning signals.
- Selection of candidates must be systematic and related to the needs of the enterprise rather than the preferences of the individual.
- The design of in-country training activities tailored to meet the needs of particular sectors will require close cooperation between the training providers ad the clients to ensure that the training offered is, in fact, customized and related to true and real needs, rather than what the provider would like to do.
- More attention should be given to manpower forecasting for enterprises, and sectors as a whole. The experiences gathered from the implementation of 9th Five Year Plan should prove very useful for the next plan.
- The private and corporate sectors must do more to help themselves through the training of trainers, the preparation of training materials, the establishment of in-house training units, the use of information technology and developing the attitude that human resource development at enterprise level is a good investment.
- The corporate and private sectors will need to consider alternative methods for the funding of human resource development activities for the benefit of their sectors.

XI. Conclusion

Bhutan stands at the crossroad of change and development. The Royal Government on one hand is striving towards raising standard of living and on other hand is trying to tackle the emerging issues of employment, in particular, the educated youth entering the labor market, the number of which is increasing exponentially each year.

The Royal Government has recognized private sector as the engine of economic growth and as the major source of employment opportunities. However, the private and corporate sectors and in particular, the private sector is still at its infancy.

In light of the above, it is imperative that the productivity of Bhutanese workers in the private sector is increased through skilled development programs and other HRD interventions so that the Bhutanese firms gain competitive edge over others. This can only be achieved through increased worker and management training and the adoption of appropriate technologies.

Towards this, the Royal Government has, amongst other initiatives, considered HRD as the main driving force and has allocated substantive HRD budgets, a true demonstration of the importance accorded to HRD by the government in its pursuit of sustainable development.

With strong political will and commitment from the Royal Government and taking advantage of the good governance, political stability, absence of labor unrest and with support from our development partners in the HRD, we are convinced that the Bhutan's HR market will be equally at the forefront of the latest trends and requirements and react to them quickly.

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Chapter 7

The Research on the Strategy of Human Resource Development and Vocational Education Development in China

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Ⅰ. The General Situation of China's Human Resources

1. The general quality of China's human resource has been rapidly enhancing

The last two decades has seen a rapid improvement of China's human resource level. In 2000, the people aged 15 and over in China had access to 7.85 years, on average, of formal education, which was 1.2 more years than the world average, and 2.7 years longer than the average of developing countries. Compared with the earlier period, the school years the age cohort of China could receive in 2000 was 2.52 more years than that in 1982, an increase of 47.28 percent, which was about fourfold as many as the world average growth speed(12.50%), and 3.58 percentage points higher than that of developing countries(43.70%).

<Table 7-1> School years of Chinese population(1982, 1990, and 2000)

Age	1982	1990	2000
6 years old and over	5.2	6.26	7.62
15 years old and over	5.33	6.43	7.85
25 years old and over	4.26	5.79	7.42

Source: National Bureau of Statistics of P.R.C., China's census of population, 1982, 1990 and 2000.

Besides, during 1982-2000, the percentage of Chinese population having received higher education increased from 0.62 percent to3.61 percent, the percentage of those having received

secondary education increased from 24.67 percent to 45.11 percent, and percentage of those only having received primary education or less decreased from 74.71 percent to 51.28 percent.

<Table 7-2> The distribution of educational attainment of Chinese population

Year	Higher education	Secondary education	Primary education or illiteracy
1982	0.62	24.67	74.71
1990	1.42	31.38	65.2
2000	3.61	45.11	51.28

Source: National Bureau of Statistics of P.R.C., China's census of population, 1982, 1990 and 2000.

2. The average educational attainment of labor force has greatly improved

Ever since the introduction of reform and opening-up, the average school years of employees in China has been enhanced by more than two years, and the total school years of employees has got doubled. In 2000, the employee size of China reached 720 million, increased by 59 percent as against 1982(450million), and the average school years of employees attained 7.99 years, 2.18 more years than that in 1982, and the total school years of employees, from 2.63 to 5.76 billion, increased by 120 percent.

<Table 7-3> School years of China's employees(1982, 1990 and 2000)

year	Employee size(in million persons)	Average school years of employees(in years)	Total school years of employees (in billion years)	Index of total school years of employees (1982=100)
1982	452.95	5.81	2.63	100
1990	647.49	6.81	4.40	167
2000	720.85	7.99	5.76	219

Source: National Bureau of Statistics of P.R.C., China's census of population, 1982, 1990 and 2000.

During 1982-2000, the percentage of employees having received higher education increased from 0.87 percent to 4.66 percent, the percentage of those having received secondary education increased from 10.54 percent to 12.65 percent, and percentage of those only having received primary education or less decreased from 62.58 percent to 40.98 percent.

At the same period, the whole quality of working staff in various industries continually improved. The primary industry workers' schooling length enhanced from 4.82 to 6.79 years,

the secondary industry workers' enhanced from 8.09 to 9.44 years, and the tertiary industry workers' enhanced from 9.29 to 10.79 years.

<Table 7-4> School years of China's emplyees in various industries (1982, 1990 and 2000)

Industry	1982	1990	2000
all industries	5.81	6.81	7.99
primary industries	4.82	5.78	6.79
Secondary industries	8.05	8.97	9.44
tertiary industries	9.29	10.08	10.79

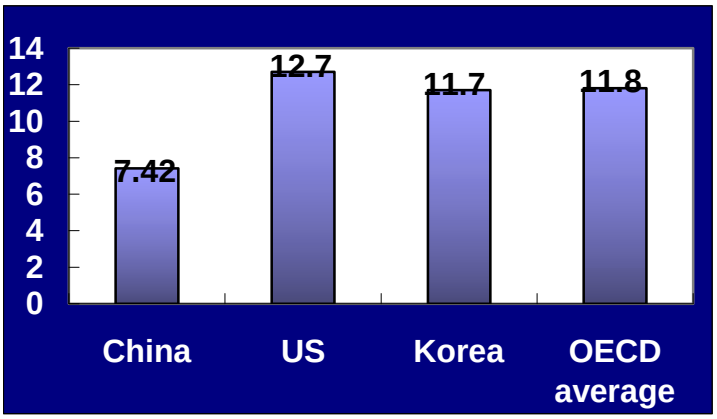
Source: National Bureau of Statistics of P.R.C., China's census of population, 1982, 1990 and 2000.

In the past 20 years, with the gradual popularization of compulsory education, China's whole intellectual quality of working staff in the primary industry, in contrast to that in other two industries, acquired a quicker enhancement, which benefited mainly from the steady decline of illiteracy or semi- illiteracy rate and from the sharp increase of the percentage of those having lower secondary education.

3. There is still a big gap between China and developed countries.

In spite of the rapid improvement with the educational attainment level of China's human resource, there is still a big gap between China and developed countries. In 2000, the schooling length of population aged 25 and above was 7.42 years, whereas that of 25 to 64-year-olds in U.S., U.K., Japan, Germany and Korea was respectively 12.7,12.6,13.4 and 11.7 years in 2001. And that of OECD average was 11.8 years, over 4 years higher than that of China.

[Figure 7-1] International comparison: School years of labor force(1999)



Source: *Education at a glance*(OECD, 2001)
Note: The figure of China refers to year of 2000.

4. The tertiary industry employees' quality does not meet the requirements of modern industries' structure upgrading.

Generally speaking, the financial industry employees are more educated than other industries'. According to the data of China's fifth census of population, the schooling length of the financial industry employees reached 13.19 years in 2000, equivalent to that of college freshmen. Among Chinese financial industry employees, about 75 percent completed upper secondary education or two-year higher education, 13.9 percent received lower secondary education, less than 12 percent had a bachelor's degree. Compared with Japan, Chinese financial industry employees are 0.8 year less educated. In China, less than10 percent of working staff have a bachelor's degree, while the same figure in Japan attains 36.65 percent, nearly 3.7 times of that in China.

Ⅱ. The General Situation of China's vocational education development

1. Carrying forward the development of vocational education has become a national strategy, which makes vocational education take on a good developmental momentum.

Entering the new millennium, especially in recent years, Chinese governments at all levels have taken it as a national strategy to forcefully carry forward the development of vocational education. In 2005, at the national working conference on vocational education, Premier Wen Jiabao pointed out China will give equal attention to vocational education as well as regular education and governments at all levels should think highly of vocational education, giving vocational education more forceful support.

During 2000-2005, Chinese vocational education, especially higher vocational education has been developing rapidly. In 2005, the nationwide new entrants of higher vocational education were 2.68 million, about 1.64 million more than that in 2000, an increase of 160 percent. And the whole student size of higher vocational education was 7.13 million, 4.97 million more than that in 2000, increasing 230 percent.

<Table 7-5> China's Vocational Education Development(in millions)

	entrants		enrolment	
	2000	2005	2000	2005
higher vocational education	1.05	2.68	2.16	7.13
Secondary vocational education	4.08	5.37	12.85	13.25
total	5.13	8.05	15.01	20.38

Source: Ministry of Education of P.R.C.

Meantime, the new entrants of secondary vocational education also acquired a gradual increase, though before 2000 the new entrants of secondary vocational education experienced a continual decline due to the national policy adjustment. In this period, the new entrants of secondary vocational education increased from 4.08 to 5.37 million, and the student size of secondary vocational education from 12.85 to 13.25 million.

2. A series of programs on fostering exemplary talents has been implemented, and the effects are gradually showing up

In recent years, China's talent cultivation scale apparently enlarged through launching and implementing a series of programs, such as "The Project of Educating and Training Skilled

Badly-needed Professionals on Manufacturing Industry and Modern Service Trades", "the Plan on the Transferring and Training of the Rural Labor Force", "the Plan of Applied Technology Training for Peasants" and so on. The first Project alone, involves over 1000 vocational schools and 2000 enterprises, covering more than 3 million students or learners. The implementation of these programs promotes the cooperation between schools and enterprises, and the two parts also mutually benefited from the programs.

In the 11th Five-year Program for Economic and Social Development (2006-2010), the State Council decided to earmark CNY14 billion in the coming five years to support vocational education. Of which, 2 billion CNY will be used to build 100 exemplary higher vocational colleges, 2 billion CNY to build 1000 exemplary secondary vocational schools, 2 billion CNY to establish 2000 multi-functional vocational training bases, 2 billion CNY to establish 1000 county-level vocational education centers, 2 billion CNY to train 200,000 core teachers of VET, and 4 billion CNY to found the national study grant support students from poor families to receive vocational education.

By the above-mentioned practice, China's vocational education has cultivated quantities of skilled talents and high quality labors, which played an important part in promoting national economy and social development.

3. The Specialty Structure of secondary vocational schools continues to be optimized, and the employment-oriented talent cultivation pattern has gained preliminary rewards.

In order to suit the industrial structure adjustment, China's secondary vocational education positively adjusted its specialty structure. In 2005, the increase rate of enrolment among machinery processing technology, numerical control technology, mold designing and manufacturing and nursing, exceeded 30 percent, while the average specialty enrolment only increase 17.7 percent.

The rapid increase of higher vocational colleges and the gradual optimization of specialty structure of secondary vocational schools brought about an obvious optimization of distribution

structure of vocational education. In 2005, there are 11657 secondary vocational schools, decreasing 86 schools as against 2003. And in 2005 the higher vocational colleges nationwide amounted to 1091, 2.5 times as many as that in 2000.

Thus, there has currently been at least one higher vocational college each city and one secondary vocational school each county in China. Meanwhile, the new vocational education system has preliminarily come into being, which is dominated by secondary vocational schools, links the primary, secondary and higher vocational educations, and consists of formal education and vocational training and communicates with other educations.

Ⅲ. The Challenges to the China's Vocational Education and Training

1. The optimization and upgrading of industry structure urgently demands that the overall quality of labor force should be enhanced.

In recent years, with the adjustment and restructuring of the international industry structure, the manufacturing industry of developed countries is gradually transferring to China, which cries for large numbers of high-quality labor forces, and inevitably desires a quick development of vocational education. Since China's entry of WTO, the advanced manufacturing enterprises, especially those in electronics, machinery, automobiles and chemistry, are growing very fast, which sets stricter standards for labor force. Taking this as an important opportunity, China must endeavor to reinforce the international competitiveness of industry by improving its manufacturing level, which naturally demands that China's human resource quality must be comprehensively hoisted and we should attach more importance to vocational education and speed up the development of vocational education.

The tendency of China's industry structure adjustment shows that the share of labor force in the first industry will continue to decline, and the share both in the second and third industries will keep on increasing. By 2020, China's labor distribution among three industries will possibly turn out to be 25:30:45. Hence, the second and third industries, the hi-tech industries in particular, will put forward higher demands on the labor force quality. Meantime, China's

urbanization rate will continue to rise, possibly attaining 57.5 percent by 2020. So, there will be a great demand for the personnel majoring in civil engineering, municipal management, gardening, traveling, community service, household service and property management, which requires that the vocational education should be further vigorously developed.

2. The construction of innovation-oriented nation pressingly requires that vocational education institutions enhance their technical innovation capabilities to cultivate large quantities of highly skilled laborers.

At present, China' national leaders have made the strategic decision of establishing an innovative country through strengthening independent innovations. But in advanced manufacturing and modern service industries of China, the shortage of highly skilled talents is looming large. Of the total workforce, technical workers only account for one third, most of which are juniors, and technicians and senior technicians only stand about 4 percent. So, under the current backgrounds, it's a pressing task to accelerate the development of vocational education, through which to cultivate millions of craftsmen and technicians needed by all walks of life.

3. The construction of new rural communities needs fostering new peasants with high quality.

As we know, 60 percent of Chinese population is distributed in the vast rural areas, and there are distinct disparities between city and countryside. Without a modernization of countryside, there is surely no way to realize the modernization of the whole country. In recent years, with the optimization of economic structure, the upgrading of industries, the advancement of technology and the improvement of management, China's rural areas are confronting two tough problems: low human capital and surplus labor forces as many as 150 million. So, it's badly imminent to foster hundred millions of modern peasants, and turn the heave populous burden into tremendous human capital. In this aspect, the vocational education and training may play an important role in training peasants to grasp agricultural technologies and other applied techniques, helping them quickly get rid of poverty and attain prosperity. Evidently, vocational

education will have a broader and more brilliant prospect of development. The spring of China's vocational education is at hand, as they say.

Ⅳ. The Problems in China's Vocational Education and Training

1. China's vocational education fails to orient itself really toward trades and professions, and the flexible employment-oriented mechanism among specialties, courses and teaching remains to be established.

To view in all aspects, China's vocational education fails to orient itself really toward trade organizations, lacking a clear and exact orientation; and the combination of enterprises and schools has not been veritably carried out, just a nominal one. The trades or enterprises that join the vocational education have not participated in the cultivation of talents throughout the whole process, failing to give timely and pertinent suggestions with regard to the teaching plan, courses setting and instruction contents, but merely taking in students to practice or taking part in the consultation of schools, in the name of the advisory committee. This reflects that a fixed guarantee mechanism is absent in the behind of the joint cultivation of talents, and many graduate students of vocational schools do not suit the qualifications of enterprises, though the schools think them qualified.

From the international perspective, the vocational education of developed countries highlights wide caliber, thick groundwork and application on the whole. In main developed countries, vocational education courses are usually scientifically designed and arranged after the job analysis is done, totally according with job qualifications. In Germany, for example, due to "the dual system", there is a high degree of matching between vocational education courses and job qualifications. In this regard, China is quite weak for it has not established the employment-oriented mechanism among specialties, courses and teaching, which results in the singleness of curricula and teaching plans, and the vocational school leavers find it very difficult to suit the requirements of society.

2. Vocational education fails to suit regions' strategic development, and an effective cooperation mechanism lacks among regions' Vocational education institutions.

Due to lacking effective communication, the vocational education of East China has quite a dispersed radiation toward West and Central China. And owing to the lack of a feasible guarantee mechanism, the vocational education service that East China can provide for West and Central China is far from enough. East China fails to take advantage of its vocational education resources to foster applied talents needed by West and Central China, and the cross-region coordination and communication mechanism has a long way to go.

3. Vocational education investment is evidently deficient, and the multi-channel fund raising mechanism has not yet been established.

In spite of a gradual increase of the overall vocational education investment, the vocational education investment as a percentage of overall education investment in China still keeps on decreasing. In 2000-2005, the overall education investment of China rose from 384.91 billion CNY to 841.88 billion CNY, increasing about 120 percent. While the overall secondary vocational education investment rose from 40.76 billion CNY to 56.87 billion CNY, increasing less than 40 percent. And meantime the secondary vocational education expenditure as a percentage of overall education expenditure dropped from10.59 percent to 6.76 percent, decreasing about 4 percentage points. What's more, within the overall secondary vocational education funds, the share of the appropriated funds decreased continually, from 59 percent to 47.1 percent, dropping 12 percentage points, which has, to some extent, exerted a negative influence on the normal development of China's vocational education.

<Table 7-6> China's secondary vocational education investment (2000-2004)

	Overall education investment (in billion)	Overall secondary vocational education investment (in billion)	Appropriated funds of secondary vocational education (in billion)	②as a percentage of ① (%)	③ as a percentage of ② (%)
	①	②	③	④	⑤
2000	384.91	40.76	24.05	10.59	59
2001	463.77	41.64	24.65	8.98	59.19
2002	548.00	43.42	24.41	7.92	56.22
2003	620.83	47.45	26.20	7.64	55.22
2004	724.26	51.27	27.87	7.08	54.35
2005	841.88	56.87	26.79	6.76	47.1

Source: Ministry of Education of P.R.C.

Honestly speaking, the fund investment of vocational education of China still mainly depends upon the government; the share of non-state funds is far from what's supposed to be. For instance, in the overall secondary vocational education funds, the share of the appropriated funds still stood 47.1 percent, apart from the tuition and fees, the in-put from other source is quite scarce; So to speak, the mechanism that government, society and enterprise jointly raise funds has not yet been established.

4 The vocational education administration lacks powerful overall planning and coordination, the government-dominated and enterprise-participating vocational education development system has not come into being.

As far as the vocational education management is concerned, China's vocational education is encountering many barriers between central ministries and local governments, lacking powerful overall planning and coordination. Different central ministries and different local governments conduct China's VET institutions respectively. For example, most secondary vocational schools are conducted by Ministry of Labor and Social Security, and higher vocational colleges are managed by Ministry of Education, and all these VET institutions are partly administered by local governments of various levels at the same time. When these central ministries and local governments draw up policies regarding the development of vocational

education, they usually start in the interest of their own. So it's very hard to effectively coordinate these conflicting policies, and the policy effectiveness is often not as ideal as expected. Therefore, the current managerial system of vocational education, actually can't meet the requirements of China's vocational education development at all.

Ⅴ. The strategic measures to further develop China's vocational education

1. It's imperative that the strategic status of vocational education in national development be veritably established and the target orientation of service as purpose and employment as guidance be carried out.

The orientation of China's vocational education should be conducted in the light of the strategic adjustment of industry structure to establish the market-oriented and employment-guided talent cultivation mechanism. On the one hand, to respond to national strategy of Going West and to meet the demand brought about by the industrial structure upgrading of West China, the distribution structure, school running pattern and specialty setting of China's vocational education should be timely adjusted.

On the other hand, according to the requirements of job qualifications, the teaching plans, teaching methods, schooling length, curricula and personnel training specification of vocational education should be scientifically designed and dynamically adjusted. And the specialties oriented toward newly burgeoning trades and modern service industries should be vigorously developed.

2. Establishing the mutually supportive coordination mechanism among different departments of government through strengthening the overall planning and guidance of vocational education.

In order to strengthen the overall planning and guidance of vocational education, the Vocational Education Joint Meeting should take the initiative to reinforce the overall

coordination and cooperation with the central ministries and local governments, with the purpose of optimizing and improving the governments' managerial functions of developing vocational education.

3. Building up the developmental mechanism of vocational education through the marriage of vocational schools and enterprises.

All trades should be encouraged to forecast their own talent demand and map out the education and training plan, develop the job qualification standards, hold kinds of vocational education training, make evaluation of professional skills, and participate in the teaching appraisal of vocational schools.

Enterprises should be guided to strengthen employee training to enhance the employees' quality, meantime they should run well their own vocational schools, and organize relevant specialty teaching and technique training in collaboration with the schools.

And it's also quite necessary to perfect related laws and regulations of vocational education, make clear the responsibilities of enterprises to join in vocational education, clarify the approaches of school-enterprise cooperation, and explore to establish the new vocational education mechanism of school-enterprise cooperation.

4. Founding the new vocational education investment mechanism that is dominated by government and has the co-participation of market, enterprises and schools.

The central government should further intensify that it is an important duty of governments of various levels to provide vocational education. Governments should make efforts to increase the investment in vocational education and improve the facilities of the training bases of vocational schools.

At the same time, governments should encourage all sectors of society, including trade organizations, enterprises and individuals to participate in the investment of vocational

education, and attract foreign organizations and individuals to joint in the establishment of vocational schools and training institutions by means of finance, taxation and social donations, with the purpose of founding the multi-channel vocational education in-put guarantee mechanism which is dominated by government and has the co-participation of trade organizations, enterprises and schools.

Ⅳ. Conclusion

In sum, in order to realize the optimization and upgrading of industry structure as well as build up an innovation-oriented nation, China's vocational education can make its due contributions. To do so, the strategic status of vocational education in national development should be veritably established, the mutually supportive coordination mechanism among different departments of government should be deliberately designed, and the new vocational education investment mechanism, which is dominated by government and has the co-participation of market, enterprises and schools, should be quickly built up, meantime, the marriage of vocational schools and enterprises should be further strengthened. Only by such ways can the heave populous burden be turned into tremendous human capital, and the big gap between China and developed countries be gradually and rapidly narrowed.

Abstract

This paper simply introduces China's general situation about the development of human resources and vocational education both nationwide and in different regions, points out that the rapid development of vocational education of China has greatly promoted the level of national human resources in recent years. Then, according to the goal of national human resource development, based on analysis of China's fundamental realities and the actual requirements of China's socio-economic growth for the development of vocational education and training, we propose the strategic conception and important moves on how to develop China's vocational education in future, mainly from such aspects as the expansion in size, adjustment in structure, cooperation among industry, teaching and research units in school running, reform of the present talent cultivation mode, and the condition improvement of schools.

Key Words: Human Resource Development, Vocational Education Development

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Chapter 8

Capacity Building and Human Resource Development in Cambodia

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Ⅰ. Introduction

Cambodia is a small country(181.035 Square kilometers) and situated in the southwestern part of the Indochina peninsula and lies completely within the tropics with its southernmost points slightly more than 100 above the Equator. The Country's capital city is Phnom Penh. International borders are shared with Thailand and Loa People's Democratic Republic on the west and the north, and the socialist Republic of Vietnam on the east and southeast. The country is bounded on the southwest by the Gulf of Thailand. The country has a coastline of 440 km and extensive mangrove forests, some of which are relatively undisturbed.

Cambodia's climate, like that of the rest of Southeast Asia, is dominated by the monsoon, which are known as tropical wet and dry because of the distinctly marked seasonal differences. The monsoon brings the rainy season from mid-May to mid-September or to early October, and the northeast monsoon: flow of drier and cooler air lasts from early November to March and then hotter air prevails in April and early May. January is the coldest month, and April is the warmest. Total annual rainfall average is between 100 to 150 centimeters, with the heaviest fall in southeast. Temperature ranges from 26 to 35 Degrees Celsius, with the highest temperature in April and May at the end of dried season.

According to population projections based on the general population census of Cambodia

1998 and international population survey 2004, the Cambodia population in 2007 is 14,331,268, of which 51.3%(7,348,737) are females, and growing at an estimated rate of 1.65% per annum. The national average population density is 75 persons per kilometer. Around 84% of populations live in rural areas. Cambodia's urban population is 16% of total.

Cambodia is a small economy, with real Gross Domestic Product(GDP in 2004 of around 18,032 billion Riels(US $ 4.5 billion) and a per capita income of 1.32 billion Riels(US $ 328) per annum[1]. While GDP growth has averaged around 6.6% per annum in recent years, GDP per capita growth has only averaged around 4.6%. The economic base is shifting away from agriculture, fisheries and forestry, with the sector accounting for around 33% of GDP. The industry sector has continued to grow strongly and now accounts for around 31% of GDP, with textiles, garments, and footwear industries accounting for 56% of sector. The services sector is the largest sector in the economy and accounts for 36% of GDP and is largely driven by the tourism industries.

Ⅱ. Education Perspectives

During over the past two decades, Cambodia was destroyed country under the war activities. The regime structure of Cambodia has been transferred so far; in 1969 the political turmoil had set in Cambodia. Therefore, in the war situation, the Cambodian people lived very difficult situation and made poorer people, family needed, disabled people, unemployment, unskilled, widow, etc. The system of education was so poor.

1. General Education

Students Statistic

Approximately 72.2 thousand children were enrolled in 2,205 kindergartens in 2003-2004, compared to 64.7 thousand in 2,041 kindergartens in 2002-2003, and 53.1 thousand in 1,700 kindergartens ten years ago. Over 2.7 million students were enrolled in 6,063 primary schools

in 2003-2004, unchanged from 2.7 million students enrolled in 5,915 primary schools in 2002-2003. But up 69.4% compare to 1.6 million students enrolled in 4,693 primary schools in 1993-1994.

And approximately 613.7 thousand students were enrolled in 698 secondary schools in 2003-2004, an increase in enrollments of 12.8% compared to 543.9 thousand students enrolled in 594 secondary schools in 2002-2003.

Enrollment in lower secondary schools increased 10.7% from 415,703 students in 2002-2003 to 459,986 students in 2003-2004, while the number of lower secondary schools increased 18.2% from 411 to 486, and educational personnel increased 7.4% from 19,841 to 21,307, while the number of lower secondary students in 2003-2004 was 105.1% higher than 224,273 students enrolled in a past decade.

Upper secondary schools, students enrollment was increased 20% from 128,182 students in 2002-2003 to 153,758 students in 2003-2004. Number of upper secondary school has increased 15.8% from 183 to 212, while educational personnel increased 4.5% from 6,070 to 6,341, while the number of lower secondary students in 2003-2004 was 150% higher than the 61,506 students enrolled in a decade ago.

<Table 8-1> Student Statistic - Number of Students, Educational Personnel, Number of Schools

	1997-1998	1999-2000	2001-2002	2002-2003	2003-2004
1. Number of Students					
Primary School	1997-1998	2,211,738	2,707,453	2,747,411	2,747,080
Lower secondary school	229,102	2,211,738	2,707,453	415,703	459,986
Upper secondary school	73,949	108,213	2,707,453	128,182	153,758
Grand Total	***73,949***	***2,553,229***	***3,170,492***	***3,291,296***	***3,360,824***
2. Educational Personnel					
Primary School	48,460	50,188	54,519	57,077	53,271
Lower secondary school	17,388	18,020	19,650	19,841	21,307
Upper secondary school	3,836	5,096	5,234	6,070	6,341
Grand Total	***69,684***	***73,304***	***79,403***	***82,988***	***80,919***

Number of Schools

	1997-1998	1999-2000	2001-2002	2002-2003	2003-2004
Primary School	5,036	5,274	5,741	5,915	6,063
Lower secondary school	350	363	534	586	688
Upper secondary school	125	140	163	183	212
Grand Total	***5,501***	***5,777***	***6,438***	***6,684***	***6,963***

In the Education Strategic Plan(ESP) 2001-05 re-emphasizes the commitment of the government and the Ministry of Education, Youth and Sport(MoEYS) to a pro-poor and policy-led education reform program for the next decade. This ESP summarize the phasing of the priority education policy and strategy reforms for the next 5-year. The proposed reforms are designed to be consistent with the government broader policies for a national program for administrative reform, fiscal and financial reform and gradual *decentralization and deconcentralisation* plans for public service management.

The Education Strategic Plan is the basis for planning the education sector's contribution to achieving Government's broader poverty reduction objectives and targets over the next 10-15 years. The ESP policies and strategies are incorporated into the approved Interim Poverty Reduction Strategic Paper(IPRSP), approved late 2000.

The policy and objectives of Ministry of Education, Youth and Sports

a) Constitutional Mandates (Chapter VI, article 68):

- *The state shall provide free primary and secondary education to all citizens in public schools;*
- *Citizens shall receive education for at least nine years;*
- *The state shall disseminate and develop the Pali schools and the Buddhist Institute.*

b) Policy of Ministry of Education Youth, and Sport (MOEYS)

- *Universalizing 9 years of basic general education and developing new opportunities of functional literacy;*
- *Modernizing and improving the quality of education through effective reform to respond to socio-economic requirements of the country;*
- *Paying more attention to practical vocational training and other forms of skill development.*

2. Technical Vocational Education and Training

Globalization demands the development of an educational system that can produce technician/technologists who possess competitive edge in the world market. The new education system must develop a manpower training system to cope with stringent requirements of the WTO and improve the operational efficiency of the technical vocational education and training system to address the manpower demands of the advanced industrial society. In this period Cambodia is facing challenges both internally and externally because of:

1) The whole system of national economy has shifted from centralized planning to market Cambodia is facing challenges both internally and externally to the market needs so that the manpower produced matches the needs of the changing market.

2) The frenetic pace of advancement of technology and information requires highly qualified manpower. The quality of manpower training in Cambodia is less than satisfactory and the quality of the labor force is lower than desirable. Hence, the education and the quality of training have to be considerably improved to enhance the labor force and expedite economic development in Cambodia.

3) The education and training imparted through the existing school-based system is not matching the world of work producing an increasing gulf between the training system and the world of work. Consequently, the graduates from the existing system have great difficulty in finding employment. This is one of many factors, which discourage students taking up technical and vocational education and training.

4) The training in the TVET sector must be competency based and the training must comply with acceptable standards that are comparable with standards in ASEAN. At present, there are many training institutions, NGOs and various other training providers conducting all types of vocational training. This has resulted in different levels of competencies and different training standards. There is, therefore, a need to establish and implement a competency-based training system and policy of testing and

accreditation that will ensure acceptable competency standards. This will be critically important in any future TVET development.

5) The open commercial policy has created competition in the world market. To compete in the world market, all countries are compelled to improve their products by improving the quality of the labor force as well as improving the infrastructure and better marketing strategies. The world economy requires a labor force of world-standard. It is within this global perspective that Cambodia must produce highly competent manpower that have the skills to be flexible, when needed, and are technology literate, especially because Cambodia has become a member of ASEAN.

Problems and Issues

1) Problem of Technical Manpower

The grand total of manpower available within the country is in surplus, but there is a shortage of craftsmen and technicians. College graduates suffer from under-employment, whereas high-tech and skilled technical manpower is in deficiency. The severe shortage of craftsmen and technicians, within the context of overall surplus of manpower, is the result of the structural contradiction between the existing educational system, which is the major source of manpower, and the societal (market) needs.

2) Issues and Problems in the Educational System

General high schools have 80% of the student population compared to 20% of the student population in TVET institutions, which is contrary to the manpower demands of the market and society. Education is currently focused on preparing students for admission to the colleges/university, which only tends to foster academic credentialism, and lays undue emphasis on humanities at the expense of technical disciplines. The proportion of technical and vocational subjects to general subjects is low; therefore, the students are less prepared for the world of work. There is inadequate level of career guidance and career counseling to help the students to choose vocations according to their job aptitudes and abilities.

TVET system tends to be inflexible and non-responsive because it does not have linkages with the industries does not undertake tracer studies of the graduates and does not provide opportunities for graduates to take refresher and continuing education courses. The student quota for science and engineering is only 26% compared to 74% for humanities and social studies.

3) Issues and Problems in the TVET System

The main issue/ problem in the existing TVET system are its inability to attract students because graduates have difficulty in getting jobs after graduation. This points out to the problem of relevancy of the existing training system. Following are some of the issues and problems facing the TVET system in Cambodia as following as:

(1) Contextual Framework for TVET

There is a conspicuous lack of advocacy for TVET at the national level. There is no regulation or law to support TVET. The development of the national economy is still slow and the demand for skilled manpower is low. The forecasting of human resources and manpower needs is difficult due to the unstable economic development. There is low social appreciation of manual labor and skills and there is no policy as yet for encouraging skilled workers.

(2) Status of TVET

In the whole educational system, TVET is separated, fragmented and discontinuous resulting in inefficiency in the system. TVET does not play any significant role with regard to national direction and economic development. In the eyes of the users/client groups, TVET has no relation with the labor market and cannot contribute to its development.

(3) Financing of TVET

Donors provide additional funds; the public training institutions are mostly funded by the Government and, in some cases. All training institutions have problems with deficit financing.

Most of the fund allocated is for salaries. There is no budget for operation, maintenance, training materials, and book etc., which impact adversely on the quality of training. On the one hand there is deficiency of fund, while on the other, the training, if it is to be responsive to the market needs requires more investment. It is, therefore, imperative that the training institutions have to explore other financing sources as well as generate income, utilizing their human and physical resources. The TVET sector should, therefore, be reformed and managed properly.

(4) Links with Industries, Enterprises & Workplace

An efficient and responsive TVET system must meet the demands of the market. Because training centers did not build partnerships with the private sector, the graduates have difficulty finding employment. Without linkages with the industries and partnerships with the private sector, the students are taught only theories and they lack the practical knowledge necessary to find and hold jobs.

(5) Labor Market Information system

As we do not have a labor market information system, we are not adequately aware of market demands and requirements. Therefore, the teaching tends to be stereotyped and conventional, which has resulted in irrelevancy of the courses. In the absence of LMIS, training and employment needs assessment is a must.

(6) Staff Development

Teachers play a key role in providing good quality training to the students. However, Cambodia has inadequate trained human resources, especially technicians and instructors, because of the genocidal atrocities committed by the Khmer Rouge from 1975 to 1979. The qualifications and the experience of the teachers are less than required. There is very little Pre-service and In-service training and they are not conducted well. The TVET management staffs are not adequately exposed to the changing dynamics of TVET and their thinking is stereotyped and conventional making them non-responsive to the market changes. Under the Basic Skills Project, over 100 teachers and staff were sent on fellowships according to their

fields of expertise.

(7) Delivery of TVET

At present, there is no link between general education and TVET. It is important that these two systems be integrated so as to make the system whole, which can better respond to the challenges of the socio-economic development in the country. TVET training has so far been trainer-centered. Now the system must be made learner-centered. TVET does not provide the variety of skills required meeting the demands of the customers. Most of the training centers are located in the city, with very few in the provinces. Additionally, private training providers are not that active. Therefore, to make the training more accessible, more training centers must be opened in the provinces and mobile training should be encouraged so that rural people can receive training. At present, training is limited to fixed hours, making it inaccessible to those who have to work to support their families. In future, training must be made accessible to those who want training or want to upgrade their skills, by making training available in the evenings and during the holidays, especially the long holidays, when the regular students are not using the facilities. The training equipment is mostly obsolete and the training materials are not adequate. This is one of many reasons contributing to the poor quality of training.

(8) Curriculum

Most curricula are theoretical and they are not flexible and responsive to the labor market and technological changes. Old traditional curricula are time based, but the new ones are modular-based. The latter is more flexible and more responsive to the market needs. Moreover, the new curricula are competency-based. These changes have led to the reform, which incorporates the whole TVET system. With this reform, the division between formal and non-formal training will no longer exist. Therefore, the future TVET system will be so flexible that it gives opportunities to those who would like to continue or upgrade their capacity.

The old curricula are trainer-centered, but the new ones are trainee-centered. Old curricula are not based on national standards, which do not exist at present. National Standards must be formulated and they must be competency-based standards. New curricula for TVET must be

based on these standards. At present, both the national standards and new curricula for TVET are being developed in Cambodia.

(9) Articulation of TVET

The present TVET system does not allow students to move horizontally or vertically and hampers individuals in advancing their careers or changing from one stream to another. There is no recognition of experience of life skills or informal skills. There is no system of Recognition of Prior Learning (RPL). Prior learning can be either formal or non-formal acquisition of competencies, which are related to different levels of training. This system enables credit transfer from one training center to another training center. In order to facilitate the recognition of every individual's level of competency and allow the individuals to advance in their profession, a national accreditation and testing system must be implemented through national accreditation and testing committees. Vertical mobility must be incorporated for proper development of TVET. TVET reform is the key to problem solving. The main objective of the reform is to make a new TVET system, which is flexible and responsive to the labor market, and allows both vertical and horizontal mobility.

(10) Management of TVET

The management of TVET is lax and this needs to be immediately reformed to expedite development. The strengthening and coordination of the system must start as soon as possible. It is in this context that the National Training Board can play a decisive role. The relations between the teaching staff and industry/workplace have to be built up and strengthened and the working conditions and the status of TVET have to be improved. The new reform must somehow focus on enhancing the leadership of the training institutions and the TVET system.

(11) Internationalization of TVET

In today's day and age, the training delivery must be transnational, therefore, national and international standards and benchmark must be given due consideration. Regionalization and globalization of the economy have caused intense qualitative competition. Quality will ensure

that the training is also responsive to the regional and global needs. In this context, boosting regional cooperation in the region for the improvement of TVET system is a must.

4) Social Circumstances and Problems

Lack of interest or appreciation of the labor force and technical personnel and societal preference for management and clerical positions are obstacles to TVET development. Social circumstances do not encourage the improvement of work conditions of the labor force and technicians, who, through technology, can boost production.

Global Trends

For the development of TVET, some of the various measures and strategies used in some countries are as follows:

General Trends

- The TVET management is increasingly cooperating with the industry and employers.
- Information technology is being used to improve the efficiency and broaden the TVET system.
- TVET curricula are being continuously updated to meet the demands of the workplace.
- TVET courses are designed with core and elective components and based on developing competencies.
- TVET aims to produce multi-skilled workforce.
- TVET is increasingly recognizing previous learning and is facilitating credit transfer system.
- TVET is becoming modular and is encouraging retraining.

Some Specific Initiatives

- Develop National Competency Standards and National Qualifications Framework.
- Develop National Skill Standards.

- Develop linkages between technical high schools and polytechnics in order to improve TVET quality.
- Use DACUM as a tool for curriculum development by implementing CBT and dual system.
- Enhance the quality of technical training in order to improve the quality of the trained technicians.

New Policy Directions

Key Policy Directions for Reforming TVET in Cambodia

Based on the situation in Cambodia and analysis of issues and problems in TVET system and taking into consideration the global trends, some of the main goals have been defined as follows:

	The Past		The Future
1	A supply driven system based on a large social demand	→	A demand driven system guided by labor market signals
2	A school based system delivering “diplomas” upon examination	→	A TVET system delivering 'competencies' as per recognized standards
3	A school based system with minimum flexibility in delivery	→	An education and training system with multiple exit/entry points and flexible delivery
4	No official recognition of prior learning	→	A system which recognizes competencies wherever and however they are obtained
5	A school based system with a study program orientation	→	A TVET system oriented to officially recognized professions and trades
6	Education and training focused on the formal sector	→	Education and training for the formal, non-formal and informal sectors
7	Separation between education and training	→	Integration of education and training
8	Centralized management	→	Decentralized management
9	Institutions and organizations fully supported and run by central government	→	Self supporting and/or managing institutions and organizations with partial support from central government
10	Low-level and terminal courses offered by the Institutions	→	Institutions to offer higher level courses as part of an alternative technical stream
11	Education and training largely inaccessible	→	More accessible education and training system

	The Past		The Future
12	Cost-prohibitive education and training	→	More affordable education and training
13	Low participation by women and vulnerable groups	→	More equitable participation by affirmative action
14	Education and training which is inefficient	→	Efficient TVET system
15	System oblivious of the standards in the region	→	TVET system comparable to systems in the region

5) National TVET Development Plan

In the third legislature of national assembly, the Rectangle Strategy is Cambodia's national development framework. The National Strategic Development Plan 2006-2010(NSDP) builds on the Strategy and gives more specific economic direction. Both documents recognize that the skills of the work force are an important contribution to economic and social development. Both documents endorse continuous expansion and improvement in work force skills to increase the rate of economic growth.

The National Training Board(NTB) has been given the mandate to support the NSDP by developing a National Technical and Vocational Education and Training(TVET Development Plan(NTDP) aimed at improving workforce skills. The Directorate General of Technical and Vocational Education and Training(DG.TVET) is required to manage the national implementation of the NTB strategy using the national program based budget system as the financial mechanism.

This document is produced annually by the NTB to adjust the training and development priorities of DG. TVET based on a review of available labor market information including both the demand and supply of training. The policies adopted by the NTB for TVET will drive the activities of TVET institutions and with the new program based annual budget, it will also drive their finances.

The first National TVET Development Plan(NTDP) was approved by the NTB in February 2006. That document outlined a twenty-five year development plan. Fourteen policies were

approved to form the foundation for the planning of programs and activities for TVET and a general commitment to demand driven TVET was made.

For the near future, it remains clear that the greatest and quickest gains in poverty alleviation and growth will be possible in rural areas where most of the poor live. The National Strategic Development Plan (NSDP) "will therefore direct 60% of resources to rural areas with increased attention to productive activities like agriculture, rural development and to health and education to increases and enhance human capital and better contribute to overall development"

TVET System Overview

Mission of TVET

Under the policy direction of the NTB, i) to develop and sustain a quality assured, demand driven TVET system that meets the needs of the Country for economic and social development as expressed in the Rectangular National Development Strategy, ii) to provide Enterprise with a skilled and adaptable workforce and iii) to respond to the lifelong needs of individuals for decent jobs or self employment by supporting appropriate training

The Two Tracks of TVET Policy

As noted in the first National TVET Development Plan, TVET has two major and often competing directions. First, TVET needs to respond to social equity issues by assisting the poor to master skills, which will enhance family income through better farm productivity or basic self-employment. Secondly, TVET must meet the needs of enterprise for a skilled and adaptable workforce as those needs arise. Both tracks are demand driven; one by the villagers and micro enterprise at the District and Provincial level and the second by large Enterprise at the National level.

The first track is primarily linked to social policy, the second largely to economic policy.

The first tract has an immediate urgency; the second track can be developed over a number of years so that when Enterprise expresses a need for labour force development assistance, TVET is ready to respond.

The second track can be largely addressed using public private partnerships with Government providing the coordination, standards enforcement and assured access for the poor.

Policy Implications for TVET
This second National TVET Development Plan continues to place maximum emphasis on rural poverty alleviation(TVET Track 1) while continuing to prepare for the gradual growth in demand for a much higher level of work force skills. It adds to the policies of the previous year the new concept of a Bridging program to help school leavers without basic entry credentials to master the academic requirements in math, science and language to allow them to enter the TVET stream.

New Policies Approved by NTB(2006)

(1) Poverty Reduction

Poverty reduction is a priority of the Government. TVET can make a major contribution in poverty reduction by giving basic income earning skills to the poor.

Policy: Target TVET programs at poverty reduction by developing a program for the poorest communes that will provide basic income generating skills based on local needs and opportunities.

(2) Decentralization

At this time, the greatest demand for government supported skills training comes from rural Communes and urban Sangkats. Small family enterprises are the primary employer and without a very refined labor market information model, data on the needs of these micro enterprises is available only on a District and then Commune level. Training to improve family income must be linked to markets for products or services that grow from the training. Markets are local and decision on market demand is local.

Policy: It is the government's policy to move decision making as close as possible to those who will be affected by the decision. Selecting the required TVET training is best done in Communes where the training will take place and where local markets and village skills are understood.

(3) Commune and Enterprise Based training

Education systems are centered on buildings and schools. TVET is not necessarily centered in this way. Poor villagers work hard and it is very difficult to leave farming for job training. Training for villagers must be short, often only part of a day, as farm work must be done every day. Training should be close to village work sites to reduce travel cost. Institutionally based residential learning models are expensive and not always accessible to those who can most quickly apply training.

Policy: Support short term training determined by the communes, delivered in the communes using existing facilities and provided by NGOs with experience or existing involvement in the Commune.

(4) Out of School Youth

Unemployment of out of school youth contributes to increasing rural poverty, urban migration and social instability. Unemployed youth lose hope and energy and become burdens on their families. Training can give skills for employment or self-employment and also build self-confidence.

Policy: In the poorest Communes**,** target TVET at reducing the number of unemployed, out of school youth. Develop from the 7 Pilots a national program to assist youth in gaining basic employment and self-employment skills applicable to a rural setting. Develop a bridging program to help this group gain access to training that leads to further education in TVET institutions up through the degree level.

(5) Self-Employment

Other than improved agriculture productivity, self-employment will be the primary opportunity for increasing family income. The experience and skills of existing community based training organizations will be useful in the design and delivery of this training.

Policy: Commune based skills training will include training in micro enterprise management.

(6) Micro Credit

Self-employment training can be wasted without access to small amounts of money to start up a business.

> **Policy:** Communes and individuals require information on micro credit providers and costs during any training given. Access to micro credit should be part of most training at the commune level.

(7) Small Enterprise

> **Policy:** TVET will develop a program to assist small, rural enterprise to expand training through informal apprenticeship programs. The program will assist in introducing appropriate technology where this can expand the opportunities for the small enterprise. Vouchers and micro credit may be a part of this program.
>
> TVET will assist small businesses to develop training strategies for their employees that can be supported by training vouchers if approved by the PTB.

(8) Public–Private Partnership, Financing TVET

International experience demonstrates that financing must be a partnership of the State, Enterprise, Communities and Trainees. Those who get benefit pay. Beneficiary financing of TVET is the main hope of developing and maintaining a system that meets real needs by responding to real demands for skills. To achieve this, a public private partnership is required.

Stakeholders must be involved in the design, decision-making and often the delivery of TVET if they are expected to support the program. The decentralization policy will engage Provinces and communes more directly and as Provincial revenues increase in the future, support for TVET may be requested.

> **Policy:** beneficiaries will fund TVET. These include, Government, trainees, Enterprise and Communities.

(9) Public Private Partnership: Enterprise Involvement in TVET

Enterprise must set the standards and training outcomes for TVET beyond the village skills

level. An effective system will even include village skills in a national skills ladder. Enterprise must also support part of the cost of public TVET as a beneficiary. Although not evident in the short term, Enterprise will depend on an expanding TVET system in the medium term and early steps are needed to engage them in investment in the TVET process. In the future, Enterprise can develop and operate sectoral technical institutes from which Government can buy training.

Policy: Increase the participation of Enterprise in the design, decision-making and provision of TVET.

(10) Public-Private Partnership: Expanding the Provision of TVET

Government's central role in TVET is to assure the development of an overall system, assure access for all, ensure availability of a skilled workforce to meet economic needs and assure quality of provision. To achieve this, private sector providers and Enterprise itself need incentives to enter the training market in response to the demand for skills. Tertiary TVET will be primarily by private sector provision.

Policy: Expand the Provision of TVET by private sector training providers. Concentrate on overall provision of TVET not on Government provision.

(11) Assuring Quality of TVET Provision

Policy: DGTVET has the central responsibility of ensuring the Quality of TVET provision. Training providers must meet and continue to meet an agreed standard to be eligible for access to any Government training funds.

(12) Quality of TVET Leadership, Management and Coordination

Policy: Improve the quality and consistency of TVET leadership, management and administration in the public and private sector.

(13) Labor Market Information

Policy: NTB is mandated to oversee the national labor market in the TVET area**.** Balancing the market for skills requires information on both the demand and supply of skills. The further development of a labor market information system is a priority.

(14) Competency Standards

In order to assure quality of training, there must be enterprise validated standards for each employment cluster. Standards exist in neighboring countries and over time, these can be reviewed by enterprise and validated for Cambodia. Regional standards will also support mobility of labor as comparisons of skills by employers are made mort direct.

Policy: National skills standards will be established and a National competency assessment system put in place.

Students Statistic

Amount of 88,367 students were completed in 2006-2007, an increase in graduates of 46% compared to 47,987 students completed in 2005-2006. Long-courses training programs mostly have conducted by the public TVET institutions and located around Phnom Penh or urban areas. Last fiscal year, student enrollments were increased 21.7% of 3,830 students completed in 2005-2006 compared to 4,892 students completed in 2006-2007. Short-course training programs usually are mobile trainings to conduct at the workplaces or field areas. Training providers are both public and private which supported by the national training fund and voucher training programs(ADB loan) and we also have some resources from donors or cost sharing from stakeholders/beneficiaries. Last fiscal year, student/trainee completed were increased 45.7% of 47,987 students completed in 2005-2006 compared to 88,367 students completed in 2006-2007.

<Table 8-2> Key Policy Directions for Reforming TVET in Cambodia

No.	Type of Training Programs	2002-03	2003-04	2004-05	2005-06	2006-07
A	Long-Course Training Programs					
1	Bachelor of Technology/Business			1,041	1,126	1,129
2	High Diploma of Technology/ Business	2,443	1,724	1,237	2,201	2,201
3	Technical Vocational Diploma level	889	1,999	594	503	1,562
Total		3,332	3,723	2,872	3,830	4,892
B	Short-Course Training Programs					
4	TVET Certificates in Public Sector	3,976	5,998	10,692	17,723	64,970
5	TVET Certificates in Private Sectors	12,840	14,866	14,330	26,434	18,505
Total		16,816	20,864	25,022	44,157	83,475
Grand Total		*20,148*	*24,587*	*27,894*	*47,987*	*88,367*

3. Higher Education

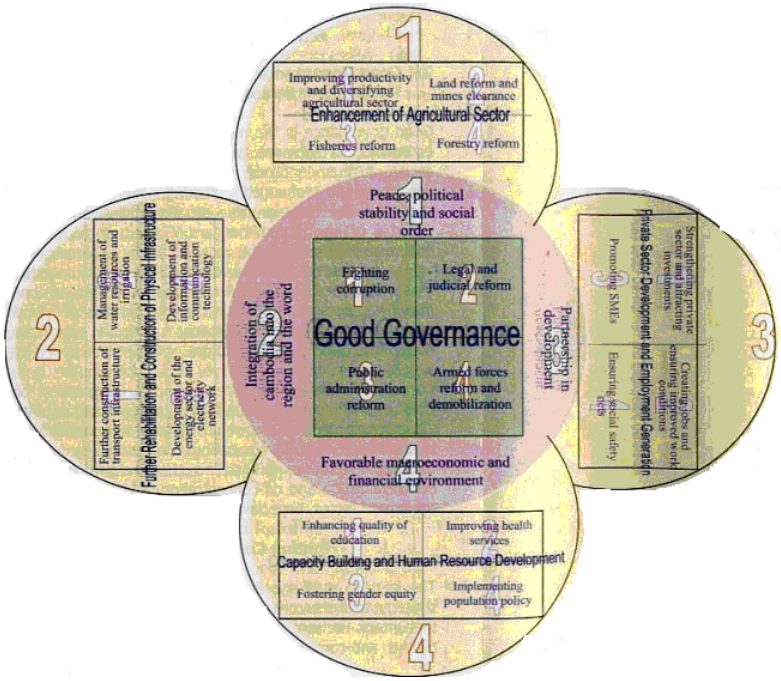
Higher Education in Cambodia is very popular. Most of the students after completed the general education 12-year; they have applied to study at University because of general education undue focus on entrance exams to college/ university even high unemployment of college/university graduates.

<Table 8-3> Student Statistic - Long-Course Training Programs, Short-Course Training Programs

No	Name of Higher Education Institution	2000-01	2001-02	2002-03	2003-04
1	Royal University of Phnom Penh	2,214	2,860	5,851	6,206
2	National Institute Management	7,826	9,538	8,698	9,108
3	Faculty of Laws & Economic Science	2,404	3,105	4,668	4,802
4	Nortun University	3,619	4,440	4,681	4,548
5	International Institute of Cambodia	329	405	474	496
6	Institute of Technology & Management	543	981	945	1,104
7	Washington Faculty	281	0	0	0
8	University of Biel Bray	0	1,496	4,825	5,984
9	Institute of Science of Management	0	319	862	783
10	Institute of Economics & Management	0	298	788	1,447
11	Vanda Instiute	0	190	552	730
12	Institute of Krong Angkor	0	73	259	319
13	Institute of Management of Information	0	198	0	0
Total		***17,216***	***24,408***	***38,454***	***41,733***

Ⅲ. National Strategy

[Figure 8-1] National Strategy



Capacity Building and Human Resources Development

The Royal Government of Cambodia has made active efforts in carrying out economic and social rehabilitation and development, by way of setting out the **rectangular strategy for growth, employment, equity and efficiency** in Cambodia, which is a crucial tool for sustaining the implementation of the platform of the Government of the 3rd Legislature of the National Assembly, in order to achieve **poverty reduction, development, progress and prosperity as well as harmony and happiness for the Cambodian people**. Especially rectangle IV is strongly commitment on capacity building and human resources development. So, the strategy to achieve let we see in each side of rectangular.

Side 1: Strengthening the Quality of Education

The Royal Government has set out a comprehensive strategy on education, as expressed in detail in the Education Sector Support Program for 2001-2005. The strategy aims to enhance

capacity of human resources with high technical and scientific skills that effectively respond to labor market ne3eds in terms of entrepreneurship, high creativity, responsibility, discipline, morality, virtue, professional ethics, and honesty in an effort to promote development.

The Royal Government is committed to achieving the goal of "Education for All" by ensuring equity in the attainment of nine years of basic education for all children and ensuring access by the children of the poor households to education, especially by improving the quality and number of public education institutions and providing more scholarships to poor students. The Royal Government will continue to strengthen its partnerships with the private sector and the national and international community to enhance and improve the quality of education services, both in vocational and technical training and in higher education, consistent with international standards and the development needs of the nation.

The Royal Government will continue to increase budget expenditures, and mobilize increased international assistance to enable incentives for teachers, assure quality instruction; increase provision of education materials, equipments, libraries and laboratories; and build dormitories for students, especially female students; continue to reform curricula and training programs; provide scholarships to poor students; promote literacy and informal education programs; finance construction of schools in the rural areas and support school operating costs.

Side 2: Ensuring Enhanced Health Services

As stated in Strategic Plan for the Health Sector 2003-2007, the Royal Government will increase the use of public resources and international assistance and continue to encourage the participation of the private sector to increase investment in the health sector that improves the health status of the people. Priority will be given to the construction of referral hospitals and health centers which can provide local health services in an efficient, equitable and sustainable manner to all citizens, especially the poor and vulnerable groups.

The Royal Government will continue to focus on the implementation of prevention programs and combat communicable diseases and promote maternal and child health care to

reduce the maternal and infant mortality, improve emergency services and provide health and sanitation education and information, especially in the rural areas. The poor shall be entitled to free health care in referral hospitals and health centers. Equity funds designed to help the poor in accession quality of health care services will be further strengthened and expanded.

The Royal Government is strongly committed to the adoption and effective enforcement of health laws and regulations to ensure high quality health services, medicines and food safety. The Royal Government will continue to encourage the use of traditional medicines with appropriate information and control in conjunction with the use of modern medicines.

Side 3: Implementation of Gender Policy

Women are the backbone of our economy and society and the Royal Government has exerted its utmost efforts to improve the status of women through implementation of the Strategic Plan of Neary Ratanak or "Women are Precious Stones," aimed at providing Cambodian women with value and hope in life, while promoting gender mainstreaming. The main objective of the program is to build the capacities of women and change social attitudes that discriminate against women.

The Royal Government puts high priority on the enhancement of the role and social status of Cambodian women by focusing attention on the implementation of the Gender Strategy, capacity building for women in all sectors, changing of social attitudes that discriminate against women, and ensuring the rights of women to actively and equally participate in nation building.

Indeed, all women have the right to health care, education and skill training. They are entitled to the equitable distribution of economic resources; equal opportunity to participate in socio-economic development, and equitable legal protection and thereby enabling women to avoid domestic violence and trafficking. Another important element is the substantive participation of women at all levels in institutions of governance.

Side 4: Implementation of Population Policy

Cambodia's population is growing at about 2.4% per annum, generating a continuing and heavy burden for production and job creation, which is barely able to cope with current needs. The Royal Government recognizes that the high rate of population growth increases poverty as it increases the burdens on family income, increases the ranks of the under-employed and unemployed, and contributes to the lowering of wages as excess labor is not absorbed by the economy. Moreover, high population growth increases pressure on water degradation and decreased bio-diversity. In urban areas, high population growth increases pressure on water distribution and sanitation and also worsens air quality. Moreover, high population growth has worsened the incidence of land-related disputes in rural areas and increased social problems in urban areas including high population density, proliferation of infectious diseases and the increase in crimes.

In sum, high population growth increases the demand for public services, which in turn increases the burdens on the Government finance and also constrains macroeconomic and social management. Therefore the Royal Government will continue to actively implement a population policy consistent with the Cambodian social and cultural context, with the following priorities:

- Support all couples and families to be free and accountable for the decision on their desired number of children and birth control, and ensure their access to information, education, service delivery, and other means to fulfill their above decisions;
- Reduce high rate of fertility and increase the use of birth spacing services;
- Reduce infantile and child morbidity and mortality, and maternal mortality;
- Promote gender equality and equity, and enhance human resources development;
- Reduce the adverse impacts of population pressure on the environment and natural resources;
- Strengthen the prevention of the HIV/AIDS epidemics; and
- Consider population factors in all economic and social practices, plans and programs at all levels.

In sum, the effective implementation of the population policy will enhance poverty reduction, especially toward the achievement of the Millennium Development Goals, which requires that each country reduce poverty by half by the year 2015.

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PART III

Bridging HRD Between and Developing Countries

Chapter 9

Human Resources Development Needs of Advanced and Developing Countries

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Ⅰ. Introduction

Human resources development faces many challenges in the 21st Century as countries strive to attain full employment and sustainable economic growth in a globalizing knowledge-based world amid considerable social and economic volatility and, in recent years, terrorism. Globalization, the "new global economy," is the force driving greater interdependence and interconnectedness between nations beyond the range of international governance structures. It challenges national institutions and structures that have supported nation states for more than two centuries; removing physical boundaries and barriers between countries; bringing about an increased flow of capital, goods, services, communications and people across borders. In spite of its intensity, globalization is itself at risk of becoming derailed, or at least being changed, by ongoing worldwide economic and social instability.[6]

Amid today's relentlessly changing knowledge-based world, nations strive to position their economies, enterprises and workforces to be more productive and competitive in an unpredictable global market, as they struggle for economic survival. Advanced countries are putting in place economic and social policies and investing in fundamental education and human resource strategies that are aimed at increasing their capabilities to meet these challenges and permit successful navigation through an unpredictable future. Information and

[6] Cummings, S.I. and Jecks, Nicole: Skills Development and Productivity through Social Dialogue, (ILO: Bangkok, 2004) p. 8

knowledge are the currency of today, replacing financial and physical capital as the source of value creation, but they are constantly being changed, becoming devalued, revalued, invented and re-invented. Consequently, nations without the capacity and resources to develop an educated and skilled workforce will be incapable of fully responding to the challenge, their enterprises unable to remain productive and competitive and the knowledge and skills of their workers insufficient for them to obtain or remain in decent employment.[7] Of course, there is certainly more to the human condition than a mere input to the productive process, nevertheless, in the context of the knowledge economy, it is convenient to think in terms of human capital and by extension human resources development and training. Therefore, knowledge can be considered an intangible asset."[8]

> Economic theorists… agree that the key to the new economy is intangible assets. While forests, mines and "physical" capital continue to generate income and some jobs, they are no longer the main source of jobs. Knowledge generation, innovation, networking capabilities, the ability to invent new products – these are the intangible factors that increasingly determine economic success.[9]

A key factor enabling nations to be able to develop a competitive edge in global markets is a workforce with the knowledge, skills and flexibility to adapt to new and changing technologies and work practices. Although many advanced nations have invested heavily in education and training; a large number of developing nations are finding that they are unable to respond; their education and training systems too weak to significantly contribute to competitiveness and economic sustainability. More often than not, the difficulties these countries suffer reflect a lack of commitment on the part of their governments to invest the necessary resources required to put in place systems and strategies required to improve and further develop their education

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[7] Ibid. P9

[8] Cummings, S.I.: The Impact of High Performance Work Systems on Workplace Learning, Productivity and Social Dialogue in Skill Development, High Performance Work Organization and Social Dialogue, (Korean Labour Institute, 2003). Pp. 227-247

[9] Betcherman, McMullen and Davidman: Training for the New Economy – a synthesis report (Ottawa: Canadian Policy Research Networks, 1998)

and training systems.

> A number of delegates commented on the analysis of the report by the World Commission on the Social Dimension of Globalization, which highlighted those countries which have benefitted from globalization most have invested significantly in their education and training systems.[10]

Advanced countries, and many developing countries, are acutely aware of the need to improve their human resources and training capacity. They actively seek ways to link HRD and training policies to economic development strategies aimed at increasing productivity and competitiveness and, at the same time, supporting labor market policies that reduce unemployment and promote social cohesion. However, the pace and erratic nature of change, on many fronts, calls for a flexible, imaginative and integrated approach to human resource development and training.

Ⅱ. Human Resources Development and Training: The Challenge

While creating opportunities for economic mobility, interdependence of production and the fostering of trade agreements within and between countries, the down side of globalization is that large numbers of workers are becoming more vulnerable. Workers, including managers, professionals and technicians as well as skilled artisans, who a few years ago felt that their jobs were secure and that their knowledge and skills inviolable, are now unemployed or under threat of unemployment. Their knowledge and skills have quickly become redundant; their basic education and level of skills not adequate enough to cope with rapid changes in technology and changes in work practices, required in knowledge-based societies.

[10] ILO: Recommendation 195, Recommendation concerning Human Resources Development: Education, Training and Lifelong Learning, Preface by the Director General(Geneva 2005).

In many cases, their situation is further compounded by the lack of opportunity to gain access to training or retraining and, when they do have access, the learning methodologies and environment is often inhibiting and does not reflect the needs of adult learners. Consequently, large numbers of individuals, particularly women and girls, older workers and young drop-outs, lose their confidence, become disillusioned and are forced to join the ranks of the chronically unemployed. These are the people who suffer and who experience the most difficulty in becoming retrained or learning a new skill.

1. HRD and training: the challenge to poorer nations

The imperative to address human resources development and training to meet the economic and social challenges of the 21st Century is universally recognized by governments in the developed and developing world. However, the perception of "how" to achieve this is often elusive, resulting in a blurred vision and knee-jerk reactions to the initiation of human resources development and training policies and strategies. Many of which are based on poor or flawed research, ineffective planning and inadequate investment of resources. Education and training systems of developing countries suffer the most when new policies and strategies are applied as a result of flawed research and untried or borrowed strategic approaches.

Developing nations, including some with economic and social development plans that would be effective given the chance, often have policies, systems and development plans imposed on them by development banks, donors or international agencies, based on claims of success elsewhere. More often than not, these countries ultimately find themselves struggling for economic survival on all fronts due to the high cost of maintaining systems developed to meet needs elsewhere. Transplanted models are often applied with little heed to the economic, cultural and geographical environment for which they will have to serve. Together with limited resources, weak administration, often endemic corruption, poor infrastructure and layers of unnecessary bureaucracy and public departments, that often duplicates or competes with each other for dwindling resources, is a recipe for failure. In addition, education and training typically has to compete for limited budgetary resources with other ministries that have more clout and priority, including defense, interior, planning and other mainline ministries, resulting

insufficient budget.

At the institutional level, poorly trained and paid government officials, management and teaching staff; inappropriate, defective or obsolete, equipment and limited education and training support material, results in the implementation of poor quality education and training programs. Consequently, many students and trainees complete their studies with education and/or skill levels that are well below those required within the world of work.

The challenge to poorer developing nations is to establish policies that are based on proven strategies (pilot projects and trials) and establish systems and frameworks that are within their capabilities and budget, and are sufficient to enable the nation, communities and individuals to work themselves out of poverty. The most effective approach is to rationalize duplicated institutional arrangements and structures, close uneconomically viable facilities and offer cost effective alternatives and, if necessary, provide support to private sector providers based on results oriented human resources development and training. Of course, this is easier said than done, particularly in an entrenched traditional bureaucratic system, where government officials feel threatened by change and do not see the need to alter the status quo (to some extent, this is also a problem in advanced countries too).

It cannot be over emphasized that a well developed and mature education and training system is a major contributor to a country's economic and social development; there are no short-cuts. Accepting that governments must take a lead role, but acknowledging that human resources development is the responsibility of all a country's citizens, the ILO calls upon all social partners and society at large to contribute and participate in economic and social development through human resources development, particularly in the promotion of lifelong learning:

> Recognizing that education, training and lifelong learning contribute significantly to the promotion of the interests of individuals, enterprises, the economy and society as a whole, especially considering the critical challenge of attaining full employment, poverty eradication, social inclusion and sustained

> economic growth in the global economy, and calling on governments , employers and workers to renew their commitment to lifelong learning: governments to by investing and creating the conditions to enhance education and training at all levels; enterprises by training their employees; and individuals by making use of the education, training and lifelong learning opportunities[11]

Many developing countries, including a few in the Asian and Pacific region, still hang onto the approach that older industrialized nations had in the past; reflecting slow growth, reliance on the market for co-ordination, autonomous education systems, employers who train for immediate needs and who suffer from periodic skill shortages. Many of these countries find themselves in an economic straight jacket, experiencing extreme difficulties in restructuring their education and training systems to produce the level of human resources needed to address new technologies required within knowledge-based societies.

2. HRD and training: the challenge for advanced nations

Advanced nations are better able to re-position themselves more rapidly to the fluctuations and changes in global markets. Perhaps Finland's dramatic response stands out more than others. In the 1990s Finland transformed itself from a commodity-based economy, reliant on trade with the former Soviet Union, to one that has embraced new technologies. The Government spent huge amounts of its budget on education, introducing technology as a key component of the school curricula and producing large numbers of technical graduates. Finish companies invested heavily in research and development. For example, Nokia, once a pulp paper company, changed its focus to electronics and has become one of the world's leading electronics companies.

Similarly, Ireland transformed itself from an ailing and virtual bankrupt economy to one of the fastest growing, dynamic economies in the developed world by introducing tight fiscal and flexible labor market policies. With an already reasonably well educated population, Ireland

[11] Ibid. p.3.

also further invested heavily in education, opening up its economy and privatizing state-owned enterprises and enacting strong legislation to open up previously sheltered activities to competition.

Following Finland's example, Canada recognized the importance of education and the need to ensure that its young people would form the core of a technology literate and versatile knowledge-based workforce. In 1999, the Government invested US$1.2 billion in IT projects, incorporating a US$134 million investment in the education system and community accesses programs. Interestingly, Canada ranks only in the middle in respect to per capita investment in ICT and, furthermore, it also suffers from its closeness to the United States with many of its ICT workers moving to the Silicon Valley or Los Angeles.[12]

The other side of the coin is that countries with a tradition of producing high value added skills are experiencing difficulties in adjusting and adapting their traditional human resources development and training systems to cope with constantly changing skill needs for new occupations that are emerging from knowledge-based new technologies. For example, the "Co-operative System" in Germany, Switzerland and Austria, where pressure to undertake training results from strong cooperation among employers organizations, the state and trade unions, with a strong formalized skill framework that promotes high value added skills, is less responsive to change and the development of new occupational fields, particularly in the service sector and in information and communication related fields.

> "observers have mentioned a number of current deficiencies of the German vocational training system. Among them are (Baethge 2003; Geißler 1991; Rothe 2001)[13] the insufficient adaptation to the changing occupational structure

[12] New Zealand Advisory Group: the Knowledge Economy. NZ, August 1999 (submission to the New Zealand Government by the Minister for Information and Technology), p 11.

[13] Cited, Hillmert, Steffen:Program for the Study of Germany and Europe Working Paper No. 06.1: Skill formation in Britain and Germany: Recent developments in the context of traditional differences (Harvard University and Bamberg University, Germany) hillmart@fas.harvard.edu and steffen.hillmert@ sowi.uni-banberg

> (especially in the service sector) and the insufficient "permeability" between general and vocational education."[14]

The indications are that while high skilled occupations are still in demand, medium and low skilled workers are becoming more and more unemployed. There has also been a reversal in these countries, where, in the past trade skills were in higher demand; recent trends indicate that higher educational level of qualifications is now rising.[15]

Perhaps the United States is the most controversial and complex in that, while it is poised to dominate the knowledge-based economies of the future, its success is driven mainly by the private sector, with the Central Government role being one of creating an enabling environment. In the US each state has control over its own education system and labour market; therefore, it would be difficult to provide a lucid overview of the US approach. The internet system was established with US government funding, but has now been handed over to the commercial sector. The US policy approach was fixed in July 1997 when President Clinton released "A Framework for Global Electronic Commerce," United States Interagency Working Group on Electronic Commerce, 1997.

3. HRD and training: Asia and the Pacific

Countries such as Malaysia and Singapore are able to forge ahead in human resources development and training, through strong government-led interventions that include a robust regulatory and enabling framework, heavy investment in education and human resources development as well as the provision of incentives to enterprises for leapfrogging technologies. At the national level, each of these countries has developed a shared vision for the future among their citizens, enterprises and workers. Malaysia has its Ninth Plan for 2006-2010, including moving the economy up the value chain; raising the capacity for knowledge and innovation and nurturing a 'first class mentality;' address persistent socio-economic inequalities constructively and productively and strengthen the institutional and implementation capacity. Singapore has

[14] Ibid.
[15] Ibid.

its Vision for the 21st century that seeks to ensure that Singapore remains a relevant and competitive centre for goods, services and information, including a complimentary Manpower 21 Strategy. Australia, Canada, New Zealand, South Africa, Scotland and the United Kingdom, to name a few, rely on the market to drive growth, but with government intervention to ensure consistent human resources development and training support to meet the human resources needs for economic growth.

These countries have based their response to human resources development and training development on research, analysis pilot projects, studies and reports. They look at the policies, strategies and fundamental issues within society itself as well as taking into account regional and global issues. Furthermore, they acknowledge that they must be ever vigilant and tune and fine tune their policies, strategies and systems regularly in order to meet ever changing global economic and social challenges.

Australia, similar to Malaysia and Singapore, where the lead and motivation for change is driven from the top, has undergone a number of changes to its national skill system, firstly establishing and then dismantling the Australian National Training Board(ANTA), basing skill reforms on a series of studies, the first of which was made in the late 1980s. *Australia Reconstructed* is its most recent version, with the National Reform Agenda, focusing on *Skilling the Existing Workforce Project,* [16] it states that:

> A healthy, skilled and motivated population is critical to workforce participation and productivity, and hence Australia's future living standards. By focusing on the outcomes needed to enhance participation and productivity, the human capital stream of reform aims to provide Australians with the opportunities and choices they need to lead active and productive lives. [17]

[16] http://www.dest.gov.au/sectors/training_skills/programmes_funding/programme_categories/key_skills_priorities/skilling_existing_workforce.htm#Overview

[17] http://www.coag.gov.au/meetings/100206/index.htm#reform

Ⅲ. HRD and Training Reforms

We have raised issues of investment in human resources development and training reform and restructuring, consequently we need to have a snapshot of the context and nature of these changes. In the past, knowledge and skills were recognized by systems of examinations required of academic or technical institutions. Alternatively, skill tests linked to certification within national skill standards systems, or assessment by national or local guilds or trades committees were a requirement for professional or artisans. Today, the rapid pace at which knowledge and technology is changing and the need to include core skills[18], promote lifelong and continuing learning and recognize prior learning, requires a more holistic, flexible and responsive method of describing and assessing aspects of work and recognition of knowledge and skills. There is also an imperative that all aspects of work are benchmarked in the context of the real world of work. This of course requires the inputs and cooperation of industry in order to ensure that skill standards, training, testing and evaluation meet the needs of the world of work. In the past, skills were learned mostly through a system of process-based learning, within institutions or a combination of on-the-job-off-the-job training. However, designing and developing occupational standards and accompanying curricula was a long and detailed process that included detailed actions, tasks, elements and jobs related to a specific skill area. Although technology changed more slowly in the past, it often took up-to five years to design or make revisions to curricula and skill standards. This sometimes resulted in occupational standards being out of date by the time they were fully completed. Skill testing was based on the learning process, linked to time spent learning in an institution, not outcome-based. Individuals who learned their skill on-the-job or who started a skill or trade and had to stop and restart again, for various reasons, more often than not were required to start training at the beginning again. Many of those trained overseas or through other means were often unable to have their knowledge and skill competencies assessed tested, certified or formally recognized. This was not only a loss and costly for the country and enterprises, and the individual, it also deterred a large number of people from attempting to learn a skill or become retrained.

[18] Core skills may be referred to as basic skills, foundation skills, soft-skills, essential skills or other means, there is no international descriptors. Furthermore, these core or basic skills have further been sub-categorized by a number of countries and the European Union

1. Competency standards

Most advanced countries today have moved-on from the traditional concept of occupational standards, testing and certification towards a broader competency-based standards system that describes work in terms of outcomes rather than the learning processes. Competency standards focus on what is expected of an employee in the workplace and not on the learning process or time spent in education or training.[19] They encompass training and assessment of knowledge and skills based on identified outcomes and roles, such as management and other functions, certifying that people can actually perform individual tasks, that they can respond to certain irregularities and breakdowns in routine and deal with responsibilities and expectations within the work environment. Competencies are described as an outcome, which are credentialed accordingly[20]. Each level within a competency describes tasks based on industry needs, taking into account core skills such as literacy/numeracy, ability to communicate and work in teams, problem solving and, depending upon the country, organization or industry, could include language skills, good citizenship etc. Competency standards cover a much broader set of skills areas and provide pathways and opportunities to those whose knowledge and skills would previously not have been recognized.

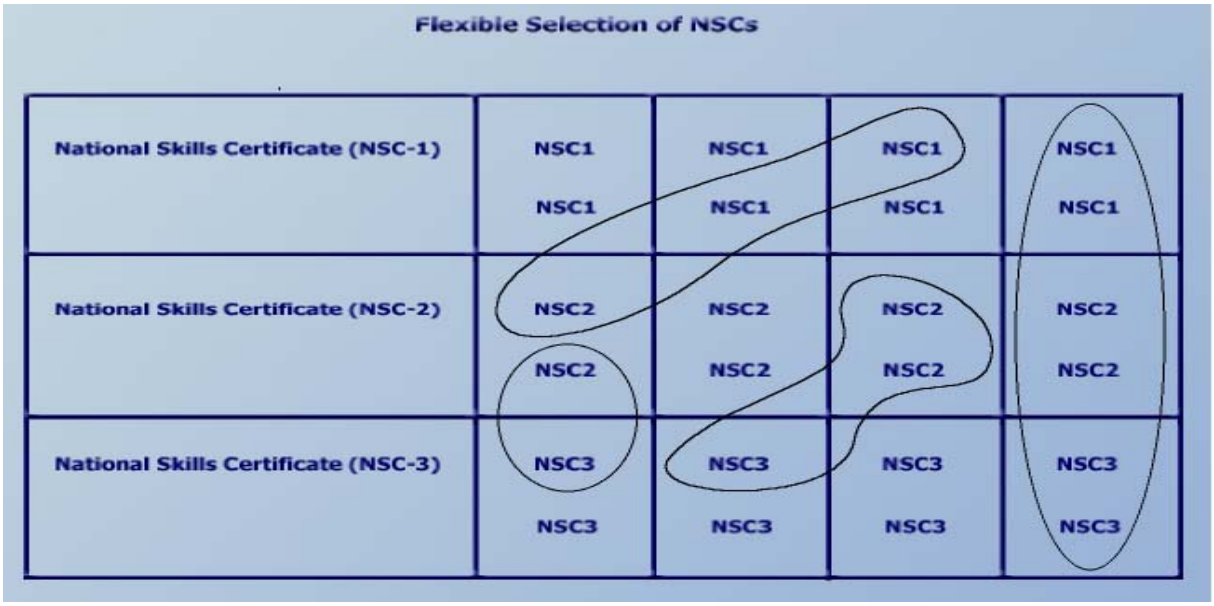
Countries such as Australia have developed a set of training packages and guidelines for teachers, instructors, enterprises and learners that accompany competency standards. Most competency standards are broad based, dealing with a whole industry or major industry sectors, rather than being linked to single occupations; this does not mean that recognized occupations, including traditional trades are not covered. All the functions and skills to work effectively in an industry or discrete industry sector can be described.[21] For example certain tasks in gas welding would be common among welders, fitters, mechanics and other trade areas. However, a number of developing countries have opted for individual trade specific standards, often resulting in duplication of occupational areas and increased costs, thereby losing the full benefit, including cost-effectiveness, of a competency-based standards system. Of course the

[19] ILO: Guidelines: Development of Regional Model Competency Standards(RMCS), ILO, Bangkok. p 4.
[20] Ibid.
[21] Ibid. p.2.

establishment of a competency-based system requires the full collaboration and inputs of government departments and the social partners, if they are to be relevant.

Below is an example of how a varied number individual national skill certificates (NSC) can be awarded to meet a number of separate but linked skill needs across a wide range of industries or industry sectors, with each national skill standard representing a discrete set of competencies. It reflects the flexibility and cost effectiveness of competency standards if they are applied across a whole industries or major industry sectors.

[Figure 9-1] Flexible selection of National Skill Standards (Singapore)[22]



2. National qualification frameworks(NQF)

Countries such as Australia, Ireland, Malaysia, New Zealand, Scotland, Singapore, and the United Kingdom have gone a step further and established their competency standards, testing and certification and assessment within a national qualifications framework(NQF). While each country has varying levels within its framework (ranging from around 5 to 11), their purpose is to address the broader issues of human resources development, training and lifelong learning by setting national parameters for recognizing education and skill qualifications. The aims are to

[22] http://www.ilo.org/public/english/employment/skills/hrdr/init/sin_10.htm

be accessible to all a country's citizens, provide pathways to learning, underpin the quality and monitor the role of the respective qualifications authority.[23] Assessment and certification within a competency-based NQF offers recognition to knowledge and skills learned in a formal or non-formal environment. Competencies already achieved will be recognized, including the recognition of prior learning. Achievements within nationally agreed standards can be recognized in a number of contexts with knowledge and skills transferrable between qualifications and providers.

It is useful to look at some of the objectives of an established system such as the New Zealand NQFs which state that:

> Its aims are to create a single, coordinated framework of qualifications with a consistent basis for recognition of education achievement, wherever that may occur. Encourage the integration of academic skills and bringing together theory and practice. Enabling and encouraging diversity among providers of education and training, recognizing academic freedom. Reforming the assessment practices in education and training and progressively raising the standards of educational achievement as well as shifting the practice of teaching to student-centered learning and providing quality assurance to qualifications and provide incentives to increase individual and collective investment in education and training.[24]

There are a number of arguments surrounding the notion of competencies that have attracted critical attention – some argue for and others against the introduction of competency-based standards and NQFs, many of these issues have not been fully resolved.[25] Some include language and particularly the terms used to describe competencies, challenging whether human language is capable of fully describing human knowledge and skills or whether or not a

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[23] *The New Zealand Qualifications Authority Statement of Intent* 2005-2008, NZQA, June 2005

[24] Ibid.

[25] Hager, Paul: The Competency Affair, or Why Vocational Education and Training Urgently Needs a New Understanding of Learning in *Journal of Vocational Education and Training, volume 56, No. 3, 2004.pp. 410-431*

behaviorist or cognitive approach should be adopted in the application of competency standards.[26] There are also a number of pragmatic issues relating to establishing a competency-based system, with cost being a significant issue, particularly when related to establishing a national qualifications framework. Who should pay is always a vexed issue within the context of human resources development and training and very pertinent to developing countries.

A further stumbling block related to NQFs is gaining the cooperation and participation of education and training institutions, particularly universities and other higher educational institutions.

Ⅳ. Financing HRD and Training

Although it is widely accepted by governments that at all a country's citizens should have access to at least basic education, the issue of financing higher education and human resource development and training usually generates intense debate. Many books, papers, reports and journal articles have been written on the subject. However, there is no single satisfactory answer to the question of "who should be responsible – who should pay," particularly when it comes to higher education and vocational education and training. One country's priorities, needs and circumstances are different from another often has a bearing on how finance is arranged. Generally, employers are adamant that governments are responsible for financing training and, in countries where there is are strong employer's organizations or chambers of commerce, there is strong opposition to introducing any kind of levy or payroll tax to offset training. Financing human resources development and training covers a wide range of issues and it is beyond the scope of this paper to provide more than a mention.

Funding human resources development and training is mainly from public taxation raised by governments. A number of countries in South East Asia, including Japan, Korea, Malaysia and

[26] Ibid. p.409.

Singapore, have adopted variations of the levy system, including strategies such as employment promotion funds and payroll-based levies. Some are based the number of employees or the size of the enterprise, with tax relief or returns often made to enterprises that provide of fund training for their employees. Korea and Japan also have a tradition of larger enterprises providing their own education and training programs, including organized workplace learning or company funded training centers, colleges or universities.

Higher education is sometimes tax-based, but more often than not, is based on a "user pays," system, direct payment or through a special tax. For example, from the mid 1970s to the mid 1980s, higher education in Australia was free, but in the early 1980s the government introduced a higher education contribution scheme(HECS), recently renamed higher education loan program(HELP). The scheme makes provision for students to attend university, deferring payment of fees deferred, until they find work and start to earn a pre-determined annual salary, after which time the government require them to pay an extra percentage of tax until the loan is paid off. The system is geared to the consumer price index(CPI), so repayment costs rise against inflation. In many countries, students rely on loan schemes, either through special government funds, banks or private finance institution and banks that provide loans specifically for education. A number of multi-nationals and larger companies subsidize undergraduate or higher degree employees, considering the cost an investment. A number or governments provide funding to students who, after completing their studies, become bonded to work for government for a number of years or pay back the amount of their scholarship, usually with interest. Scholarships are often awarded by national, international or private trust funds to those in need or individuals with outstanding achievements at school or university.

More and more enterprises, realize that their future productivity and competitiveness is reliant on investing in the knowledge and skills of their workforce and provide either training or subsidize their workers to attend training at an institution. Training may take the form of workplace learning, which, if well targeted and structured, can be very cost effective as well as a sound way of learning a skill. Traditional employers often support their apprentices or trainees to attend weekly, day-release or block release training programs. Some governments support this type of training providing subsidies or tax relief to employers. A number of large

multi-national companies have established web learning, facilities, providing interactive training and material in many languages.

Many small and medium enterprises do not have the resources to provide training or want to subsidize their workers. They often resent workers taking time off during working hours to attend training because they do not have a replacement worker. Many employers do not support training, using arguments such as once trained a worker would expect a higher wage, or they would be poached by other enterprises or would seek employment elsewhere for better conditions and higher wages.

Ⅴ. Interlink and Exchange

Interlink and exchange in the context of human resources development and training has many dimensions, forms and concepts, encompassing research, policy and planning, projects, information, technology and personnel and others not included in this paper. There has been a diverse range of undertakings and efforts made to establish and promote interlink and exchange programmes and networks by numerous organizations, government agencies, non-government organizations, community groups and others. These include UN agencies such as the ILO, UNESCO, Bretton Woods's institutions, as well as organization, educational bodies and communities such as ASEM, APEC and ASIAN, the European Union, Rotary clubs, universities and colleges. Many have specifically targeted their activities towards supporting human resources development and training for individual groups such as government, students, particular ethnic or minority groups, women, youth or people with disabilities. Some were established for special purposes such as the ASEM *Working Group on Lifelong Learning: Basic Skills for All*, others were established for a more general networking nature and one or two with sunset clauses to serve a purpose and then end. Each with its own purpose, benefits and focus, including: cultural; educational and technical exchange programs; educational and technical training and the promotion of better understanding between cultures on human resources development and training. Indeed migration or temporary migration of labor, either skills or unskilled, can be considered as interlink or exchange, although this is a very complex and divisive issue. Many interlink and exchange support web-based approaches, using

information and communication technology to promote, learning programs, virtual forums and meetings, chat rooms and information dissemination and exchange. A number of large international organizations, multinational organizations and large enterprises have established web-based distance learning and training programs.

The most prolific information and communication technology used is computer web-based, but satellite communications is often used. However, the cost is quite high, but is usually less costly than traveling to attend meetings. On the other-hand, there are very few internationally accepted standards for web-based human resources and training, consequently, event with the most up-to-date equipment, programming and interface can be a problem.

1. Interlink and exchange: issues and case studies

While still problematic, interlink and exchange between advanced countries is less difficult to facilitate than between advanced and developing countries or developing and developing countries. Language is sometimes a problem, but often there are mismatches between government and institutional systems, education, skill levels and cultural and religious differences. Many developing countries have the added burden of identifying and committing resources, including human resources, facilities and equipment towards interlink and exchange. A few countries restrict domestic access to interlink or exchange, others have internationally imposed restrictions or embargos that impede interlink and exchange.

There is a great need to support better interlink and exchange among human resources and training public and private sector providers; at the enterprise level; within workers' organizations and communities. Interlink and exchange strategies can lead and help to facilitate the improvement of education, HRD and training systems, promote lifelong learning and contribute towards workforce employability and productivity as well as the competitiveness of enterprises and socioeconomic stability. A number of technically advanced institutions and organizations in the region, particularly in Korea and Japan(HRD Korea, KLI, KUT in Korea and OVTA in Japan) have, for many years been involved in promoting knowledge and skills development, demonstrating their willingness to assist institutions and

organizations in poorer countries in the Asia and Pacific region. However, resources are often limited, with only a few constructs or networks in place to facilitate interlink and exchange of HRD and training, knowledge, products and services.

Dealing with interlink and exchange at many different levels is often an enormous and complex task that requires a high level of understanding of how human resources development and training should be approached, intellectually, practically and philosophically at different international and intercultural and multicultural levels as well as a keen sensitivity towards the needs of various governments, enterprises, workers' associations and communities. Below are a few examples of issues that have arisen from interlink and exchange.

1) Training fellowships and study tours

If we take a case study of a fellowship training program supported by the Ministry of labor and Korean University of Technology(KUT) and the ILO in 2004, we can perhaps start to understand some of the difficulties encountered at varying levels when planning and organizing a program for a diverse range of developing countries and in a number of highly technical fields of HRD and training

In 2004, twenty technical teachers/instructors were invited from ministries of labor/education and technical colleges/university of China, Mongolia, Thailand and Viet Nam to attend an 11 day training program in Korea. Training was provided in two fields of computer-aided innovative teaching methodologies; Multimedia Application(MA) and Mechanical Engineering(ME). Both courses were of a high quality and technically very sound, including experienced supervision and teaching. The ILO has much experience in arranging fellowship training and study tours, including travel and protocol issues. Invitations were sent out to the relevant government departments of the countries concerned, with specific requests that persons selected should be involved in teaching or instructing students or trainees in one of the two fields and have a good command of the English language. At the outset, the following issues were encountered:

- Although a final date for nominations had been stipulated to the countries concerned,

nominations were not received until well after the closing date. This resulted in very little time for evaluation of the suitability of the candidates prior to travel and commencement of the training program;

- Although each candidate was certified as possessing the required skill and knowledge to complete the course, by an authorized person in each country, the majority of those nominated had little or no experience in the either of the disciplines;
- Each candidate was also certified as being proficient in spoken and written English; however, on arrival in Korea, it was found that most had little or no English language skills. Out of those who were able to converse in English, only two were able to converse at more than an elementary level;
- It was later discovered that a number the candidates were awarded the fellowship as a reward by their department, and not because they had the relevant technical or language skills and experience;
- During the training course it was further discovered that the technology was beyond the capabilities of all participants and the equipment required was not available at any of the institutions in the participating countries**.**

2) Establishing competency-based standards, testing and certification

This second case, involves efforts to establish a competency-based standards, testing and certification system and national qualifications framework in an East Asian country with a large population. The model, based on one already operating in an advanced country in the Asia and Pacific region, was not without problems in the country of origin. The East Asian country concerned has a diverse population with many isolated geographical regions and provinces. Responsibility for implementation of the system has been assigned to a reasonably new and inexperienced body that does not possess the resources required to fully develop a fully functioning competency-based standards capacity at the national, regional and provincial levels. Although efforts are being made to develop and implement competency-based standards, these are presently targeted towards separate industry standards rather than whole industries or industry sectors. Furthermore, as provincial and district institutions and training providers have not been involved and are not aware of the

issues involved, as well as not having received any training or been provided with accurate information on competency-based standards, they remain confused. The result is that old and outdated methodologies and standards continue to be applied, but under the pretext of competency standards. The new national body is also responsible for establishing a national qualifications framework; the task difficult and tenuous under optimum conditions – it is formidable under the present circumstances.

3) Case studies: donor interventions

Difficulties that are frequently encountered when one nation provides aid assistance to another in the form of physical infrastructure and equipment. Approximately four to five years ago a large Asian country constructed and equipped an advanced technical training institute in a South Asian developing nation that now finds itself struggling to operate the centre with a limited budget and human resources. Furthermore, the institute was constructed in a region that does not, presently, have the potential industrial base to warrant such a facility, which is modeled on a typical institution within the donor country. Indeed, much of the equipment provided was of a type not found in local markets, consequently maintenance, repair and replacement of parts will be problematic in the future. The institute was completed approximately four years ago, but local teachers and instructors have not yet been fully trained; the remains not fully utilized. Very few resources have been made available to operate the institute, including limited training materials; manuals and curriculum. Administration and support resources such as web and e-mail facilities are not available and the single photocopier was not working up-to November 2006. A number of items of equipment provided by the donor, such as computers, printers and scanners, were already becoming out of date at that time.

Such anecdotal information is often introduced as a means of demonstrating the need for donors and others to apply a practical and responsible approach to interlink and exchange in order to prevent a negative, or even disastrous, impact on developing nations.

4) Fully researched training fellowships

A more positive example of interlink and exchange in the late 1990s, relates to a large vocational education and training project supported by the ILO and UNDP in Cambodia. A number of national staff and government counterparts were sent for various training courses in community-based training, training needs assessment and competency-based standards and curriculum development to Thailand and Australia. The knowledge and skills of the candidates were first carefully evaluated and their skills and knowledge tested. Furthermore, an agreement was reached between government departments and the project on the roles and responsibilities of the candidates on their return to Cambodia after training. This was particularly important as two candidates were selected to attend a costly one-year bridging course for bachelor of technical and vocational education and training in Australia. Research and assessment was carried out to determine the suitability of the institutions and organizations in Thailand in relation to the needs of community based training, competency-based and gender training levels required for Cambodia. Training was assessed as appropriate and the training mismatch was found to be challenging, but within the capacity of the candidates. For candidates attending training programs in Thailand there was the advantage of cultural and religious similarities. All candidates were tested for functional language abilities and a number were required to attend a six-month English language training course prior to final selection, with language skills retested after the six months. The two selected to attend university in Australia were assessed and tested by the Australian university prior to acceptance. On their return to Cambodia after completing training, all candidates were required to write separate reports on the training provided, their experience in another country and how they would apply the knowledge and skills to their work in Cambodia. This was put into a database for future reference when organizing overseas training programmes. Out of 33 candidates, all were successful, although, as was expected, over a period of two years 25 per cent were promoted or left government employment for private sector or self-employment. Nevertheless, the knowledge, skills and confidence gained from the training was still being utilized and is still of benefit to Cambodia. One of the candidates attending university in Australia is now a Director-General of Technical and Vocational Education and Training.

5) Web-based virtual interlink and exchange

A number of large enterprises and multi-national companies and some academic institutions and multinational enterprises make extensive use of information and communications technology(ICT) as a means of interlink and exchange, often on a large cross-border scale. Many of us take for granted the use of ICT as a means of interlinks and exchange as part of our everyday lives at work and at home. Furthermore, many larger enterprises, multi- national companies and organizations use web-based technology for virtual conferencing, individual or group meetings, seminars, auctions and conducting business deals, using the internet, intranet or satellite communications, with huge savings on amounts that were once outlaid for travel and phone conversations.

Indeed, today the employees of a number of multi-national companies work in virtual workplaces scattered all over the world. Many are trained and work from their homes, with training handled by on-line learning techniques. One example is the Dow Chemical Company, with 40,000 employees, based in 245 locations worldwide, including those in virtual home offices, can access 24 hours a day, seven days a week on-line learning resources that combine the latest technology with up-to-date and standardized content. Employees take required and optional courses(265 but increasing) that cover many topics - from safety instruction and product training to ergonomics and employee development. These can be accessed in seven languages: Dutch, English, French, German, Italian, Portuguese and Spanish. However, the ILO warns that:

> An irony of the communications revolution, moreover, is that a sharply higher intensity of virtual communications can go hand in hand with increased isolation. That much work in the digital era can be done anywhere, anytime has meant for some that this is precisely what is occurring, with a consequent blurring of hours or work and hours of leisure. Far from adjusting working needs to the needs of family life, there can be rising pressure to work everywhere and all the time.[27]

[27] ILO: *World Employment Report 2001*; The Skills Challenge, (Geneva 2001)

Advantages and savings compared with classroom-based training are substantial. The flexibility of web-based training systems enables employees to schedule training when they need it, at their own convenience. They can exit the system and continue the learning session whenever it fits their schedule. The system offers one entry point for all web-based learning. Therefore, after taking one course, employees know how to access future courses and are familiar with the standardized navigation system. During the first year of operation (1999), a return on investment was achieved and economies of US$3.5 million were made. These were expected to rise to US$45.6 million over the first three years of the project as a result of automatic record keeping, reduced delivery, material and travel costs, and reduced learner time. As part of the organization's culture, the system enables employees to take an active part in their professional development.

There are a number of similar or variations on the Dow Corning experience. For instance Siemens Information Networks(USA) has not only turned virtual training into a cost-effective strategy, but has also improved productivity and raised the company's market share and generated higher rates of return on investment. IBM and Nokia Telecommunications, two leading-edge ICT companies, have in the past used a combination of web and traditional classroom training. However, they have increased the web element as it is more accessible to staff spread across countries and can be accessed when needed. [28]

2. Lessons learned

The above reflect a number of lessons learned including:

- The need to properly identify, determine the feasibility and match needs and benefits of human resources development and training interlink and exchange in a diverse range of participating economies, societies, cultures and political systems;
- Human resources development and training programmes and projects need to reflect the

[28] *ILO World Employment Report 2001*; The Skills Challenge. p. 17.

actual, not perceived, needs of the recipient countries against capacities, capabilities, ongoing resources, available technologies, infrastructure and equipment;

- Ongoing costs and ability to maintain infrastructure and equipment involved in interlink and exchange must be accounted for if valuable resources of the receiving country and donor country are not to be wasted. Constructing and equipping elaborate and high-tech facilities are wasteful if the technology is beyond that required of local enterprises and communities, if ability of the human resources to transfer the knowledge and skills is not adequate and if ongoing resources to carry out maintenance and repairs are not available and sufficient;
- A set of criteria, including assessment, evaluation and tests, are needed to determine the ability and ensure commitment of those participating in the interlink and exchange programmes, including fellowships, study tours and short and long term education and training, in order to ensure that they will continue to be involved and have the opportunity to use the knowledge and skills gained;
- Those attending human resources development and training must be familiar with and competent in the medium of communication and learning;
- Appropriate use of ICT should be fully explored in promoting interlink and exchange in education and human resources development and training

Ⅵ. Recommendations and Approaches to HRD and Training Interlink and Exchange

There is an obvious need for research, planning and development to improve the effectiveness of interlinks and exchange programs, projects and activities within and between countries. Indeed, much can be done to develop innovative and integrated approaches to interlink and exchange between countries and among groups of countries. Although there are a number of positive examples of interlink and exchange, the benefits could be better optimized with careful research, planning and development of strategic approaches. Interlink and exchange within and between private sector enterprises, although specialized and focused on the needs specific enterprise, should be explored for best practices and lessons learned.

An overarching recommendation, as a foundation for human resources development and training interlink and exchange, is the establishment of an interlink and exchange program that, during an initial pilot phase, should establish a limited number of key observatories in institutions in selected advanced and developing countries. The main tasks of the key observatories should to carry out human resources development research, establish an interlink and exchange web-page, provide and disseminate information and develop programs, projects and activities among institutions in participating countries, depending upon resources available. After completion of the pilot phase, an assessment and evaluation should be carried out to determine success, sustainability, future direction and feasibility of expanding the interlink and exchange observatory program to other countries wishing to participate. The program should be coordinated and guided by an interlink and exchange coordinating committee that includes representatives of the key observatories as well as major stakeholders.

It is further suggested that the following approaches be considered in the promotion of effective human resources development and training interlink and exchange between countries:

- Policy analysis and advice (government to government, international organization to government, social partners to government, institution to government, institution to institution, enterprise to institution, enterprise to enterprise);
- Support to stakeholders to build human resources development capacity through projects, advisory services
- Projects be established to build capacity and encourage self-motivation of countries, institutions and individuals involved;
- Provide community support, including community human resources development and training formal and non-formal education and training programs and projects, integrated rural development programs, fellowship and study tours and exchange of key community personnel
- Information dissemination and forums to exchange and share knowledge and experiences;
- Exchanges of personnel at government, enterprise level and institutions and individual and;

Information and communication technology(ICT)

It is also suggested that an overarching strategic theme should be the use of ICT as a means of interlink and exchange, using all possible media of internet, intranet and satellite transmission to facilitate:

- Improvement of access to up-to date knowledge and information on human resources development and training issues;
- Facilitate distance learning education and training activities and distance support, mentoring and knowledge and skill upgrading for those returning from education and training fellowships, study tours and courses in the use of technology and specialized techniques(Many find, on their return from education and training overseas, that they are unable to obtain support or reassurance);
- Strengthen participating countries, government and non-government institutions, communities, private sector and other organization's capacity to deliver skills human resources development and training, introduce innovative technologies, work practices, the concept of competency standards, national qualifications systems and other systems and strategies for enhancing a nations production and global competitiveness; Establish a network among like-minded countries, institutions, and communities and organizations that wish to share knowledge and information on human resources development and training

Ⅶ. Summary

Over the next quarter century, an additional two billion people will be added to our planet. Whether a large population represents an asset or a setback to progress depends, above all, on whether people will have the capacity to shape their future. The new economy offers unprecedented opportunities. But the gains will not be automatic. It will benefit nations in proportion to their success in building human capacity[29]

[29] Zhang Shengman, World Bank article, based on a paper developed for a speech given at the *APEC High*

In arguing the need for interlink and exchange, particularly between developed and developing nations, we looked at the wider issues of human resources development and training within the context of competitive global markets. These include the difficulties faced by all countries in developing human resources development and training capacity, but particularly the problems suffered by developing countries. We determined that more developed countries have more responsive education and training systems and the resources to be able to research, plan and restructure their human resources development and training systems to meet ever-changing global economic challenges. We also draw attention to the difficulties suffered by developing countries due to their inefficient and ineffective education and training systems that are unable to meet their own national requirements for human resources development and training. These issues, linked to a large proportion of private sector apathy toward human resources development and training, leave many developing countries unable to meet the challenge of competitive global markets. We assert that a mature human resources development and training capacity can only operate well if the education and training system has the resources and is able to provide workers with the knowledge and skills to meet the challenges of ever-changing technologies and work practices in a world that is interconnected through the process of economic globalization.

We looked at the need to identify and properly measure and recognize knowledge and skills within the context of the world in which we live and work. We have argued that this requires the establishment of a means to benchmark and measure the outcome of knowledge and skills as a competence, preferably within a qualifications framework that provides opportunities and pathways for achievement throughout life and through all aspects of education and training.

While acknowledging that there are a number of players presently or have in the past been involved in interlink and exchange, we see a need for a wider and more innovative approach to interlink and exchange of human resources development and training between countries. We have also tried to identify a few of the issues that occur with certain aspects of interlink and exchange, some negative and others more positive. We tried to identify some of the lessons

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Level Meeting on Human Capacity Building, Beijing, China(May 15, 2001). The complete text can be seen at: *www.worldbank.org/wbi/wbikp/news.html*.

learned from past interlink and exchange programs, projects and activities and make suggestions for establishing a system of interlink and exchange that researches and provides information, promotes communication as well as developing programs, projects and activities among interested countries.

The interconnectedness of the world in which we live today requires that all nations have access to knowledge and technology. For example, without technological innovations in remote rural areas, as well as urban areas, we will be unable to provide the food required to prevent starvation, which will, eventually adversely impact on more developed nations. Therefore, it is important that nations are able to share their knowledge and ideas through interlink and exchange. Advanced nations are in a better position to become agents of change in the field of human resources and training, encouraging and providing assistance to other nations, sharing knowledge and experience through the use of interlink and exchange to promote economic and social development for the future - for all.

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Chapter 10

Building Human Resource Highways for Bridging between Advanced and Developing Countries

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Ⅰ. Introduction

The emerging issues of globalization, advancement in technology, mobility of workforce, etc. have resulted in changing the workforce scenario bringing vocational and technical education to the forefront. Quisumbing(2005) averred that: "If education is the key to development, vocational and technical education is the master key that opens the door to the world of work and the economy, alleviate poverty, save the environment and improve the quality of life."

Technical and vocational education and training(TVET) is the systematic and orderly transmission of knowledge, skills and values to develop a workforce that is able to enhance productivity and sustain competitiveness for human resources development(HRD) in the global economy. It encompasses the ability to accelerate economic growth, provide marketable labor supply, minimize unemployment and underemployment, infuse technical knowledge, and reduce poverty.

For many countries in the Asia Pacific region, TVET is not merely an option but a necessity. Education alone may be democracy but with technology, it becomes power. Balogh as cited by Tilak(1994) stated that: "As a purposive factor for rural development, prosperity and progress, education must be technical, vocational and democratic." It goes without saying that TVET is both democracy and power. It is democracy because it liberates the learner or the trainee from

the bondage of ignorance and illiteracy. It is considered power because it brings technological superiority thereby breeding competitiveness and productivity to a country.

TVET aims to build a highly efficient human resource highway which allows technology and people to circulate and move around the Asia Pacific region without significant hindrances or delays. With the acquired power and democracy, the human resource highway will lead us to a life of durable economies and healthy communities.

In this paper, according to Asia and the Pacific regional status and trends of TVET for HRD and labor markets, we would like to:

(1) give a picture of a potential framework between labor market needs and workforce suppliers for students/jobseekers through building Human Resources Highways for bridging between advanced and developing countries.

(2) emphasize the needs of harmonization and standardization HRD systems for labor market opening and workforce mobility between advanced and developing countries in order to build human resource highways.

Ⅱ. Regional Status and Trends of TVET for HRD in Asia and the Pacific

Nowhere in the world can we feel the enigma of social, economic, scientific-technological and politico-cultural disparity than in the Asia Pacific region. In spite of the significant achievements made, these imbalances are still obtrusive of development. The advanced countries of Japan, Republic of Korea and Singapore not only exceeded world averages on many development indicators but are also considered the precursors of technology. On the other hand, Afghanistan, Bhutan, Nepal and Pakistan are the most deprived. Haq as cited by Churton(2004) refers to South Asia as “the poorest region, the most illiterate, the most malnourished, the region with the highest human deprivation and the most militarized region in the world”.

Indeed, the widening inequality of opportunities, wealth and empowerment continue hounding the region and yielding a negative impact in the pursuit of sustainable human resource development.

1. Demographic Trends

Historians always claim that the rise and fall of civilizations are closely linked to demographic trends. Taken in the context of education and training, demographic changes such as population growth, aging population, international migration and urbanization herald an ever evolving set of challenges for educational administrators. Presented in this paper are results of trend analyses conducted by some international organizations like the United Nations Population Council (2000-2050) and the National Intelligence Council(2000-2020) of USA.

1) Population Growth

A high population growth rate demands more food and social services such as education, training and employment, health, recreation, etc. and when these are not satisfied, the situation often ends up to a decline in the standard of living. The United Nations Population Council predicts that population growth rate is expected to increase by 2.6 billion, from 6.3 billion now to 8.9 billion by 2050 with lower population growth to be felt by more developed(0.25 %) than less developed regions(1.46%). Two Asian countries, China and India account for nearly one-half of the world's population.

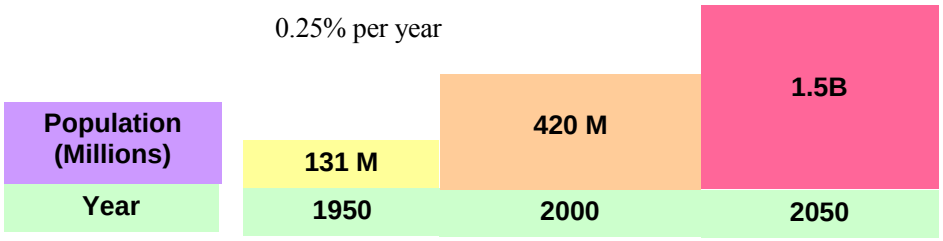
2) Aging Population

The number of ageing people is growing as a result of lower fertility rate and better health conditions. This increase in aged population is an area of concern for less developed countries.

The Bulletin, *Global Aging: the Challenge of Success,* points out that people of age 65 or older already make up nearly one-fifth of the population in many European countries, and that the share is rising. And less developed countries are also seeing their populations grow older,

ushering in new social problems for societies that might have few public support systems. By 2050, nearly 1.5 billion people age 65 or older will reside in less developed countries with the rate of 0.25% per year.

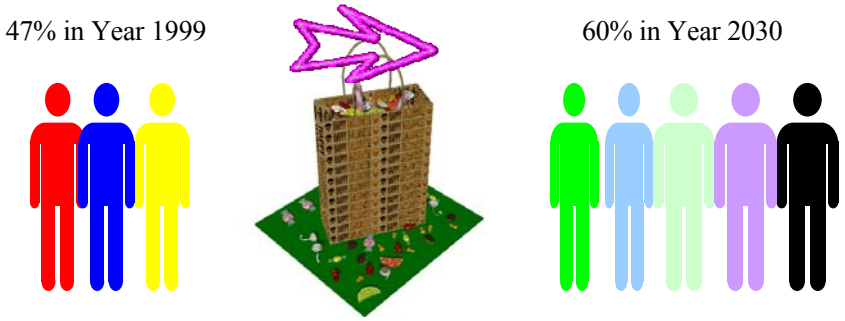
[Figure 10-1] Growth of Ageing Population(60 years and above)



3) Massive and Rapid Urbanization

Urbanization takes a new dimension and matter of concern in the Asian Pacific region. A UN article says that in 1999, 47 percent of the world's population(2.9 billion people) lived in urban places. By 2030, the UN projects that proportion will reach 60 percent, totaling 4.9 billion people. Roughly 95 percent of this massive urban growth will occur in less developed countries.

[Figure 10-2] Urbanization Rates to Urban Areas



More than 60 percent of the increase in the world's urban population over the next three decades will occur in Asia, particularly in China and India, but also in Pakistan, Bangladesh, Philippines, and Vietnam. As per World Bank indicators, Asia will have a lower overall urbanization rate in 2030 (53 percent) than any other region. Africa will be slightly higher at 55 percent, while Latin America is projected to reach 83 percent but Asia's total urban population

will exceed 2.6 billion in 2030, compared with 604 million in Latin America and 766 million in Africa. Definitely such a huge flow of human resources to urban areas puts pressure on governments to take measures and allocate funds for better health, education and accommodation.

2. Brain Drain with International Migration

Brain drain is the exodus of educated or professional people from one country, economic sector, or field to another usually for better pay or living conditions. The outflow of professionals may be due to shortage of jobs, population growth and increasing aging population. While the brain drain syndrome may be beneficial to the individual migrant, it may be detrimental to the sending country. One drawback is that investment in education in a sending country will not lead to faster economic growth if a large number of its highly educated people leave the country. In addition, efforts to reduce specific skill shortages through improved educational opportunities may be largely futile unless measures are taken to offset existing incentives for highly educated people to emigrate.

Asia has been largely a region of out-migration, since the 1970s. This region has been the site of international migrations, much of which is intraregional. Today, out of the 179 million people who are outside of their countries of birth, an estimated 50 million are in Asia. Of the many forms of international migration in the region, the movement of labor across borders has been most significant. Contrary to the intent of governments to keep migration temporary, it has been sustained in the past 30 years. Asia, thus, like other regions before it (North America, Northwestern Europe, the oil-rich Gulf countries), did not escape the need to import labor to sustain development processes. The ILO report framed the following picture of Asian region migrants.

> *"In the 1980s, the high performing economies of Japan, Hong Kong, Singapore, and later on in the decade, Malaysia and Thailand, had to import migrant workers. The construction sector, plantations, fishing and rice mill industries and factories in these countries experienced labor shortage, as locals moved on to better job prospects. The*

demand for female migrant workers increased, but the demand was limited to domestic work (Hong Kong, Singapore, Malaysia) and entertainers (Japan). On the other hand, the Middle East continued to draw migrants, although not in the same scale as in the previous decade. A remarkable development was the opening of the labor market to women migrants to fill jobs in the service (mostly domestic workers), sales and professional (e.g., medical personnel) sectors. The Philippines, Indonesia and Sri Lanka became the major source countries of domestic workers. Female migration from the latter two countries, in particular, is heavily directed to the Middle East countries. While domestic workers also dominate female migration from the Philippines to the Middle East, a sizable number are professionals (mostly nurses and other medical personnel). The concentration of women migrants in domestic work and entertainment (also in caring professions such as nurses) highlights the gendering of the labor market. In Asia, male labor migration has specialized in addressing the labor needs in the formal/productive sectors, while female labor migration is responding to the domestic work force."

In view of some of the above trends and associated immediate problems and issues in labor force migration it can be summarized that:

(1) Mobilization of workforce across national borders would continue with out-migrant from less developed countries to more developed countries.

(2) Disparity of skills and competencies with the optimum qualifications required would remain a matter of concern for the employers and the migrants both.

(3) Demand to make standardization and harmonization of TVET systems through accreditation and certification would grow.

3. New Trends in TVET for HRD in Asia and the Pacific Region

With the above mentioned, disparity, imbalances and inequality in the Asia Pacific region, new trends in TVET/HRD are geared towards the following:

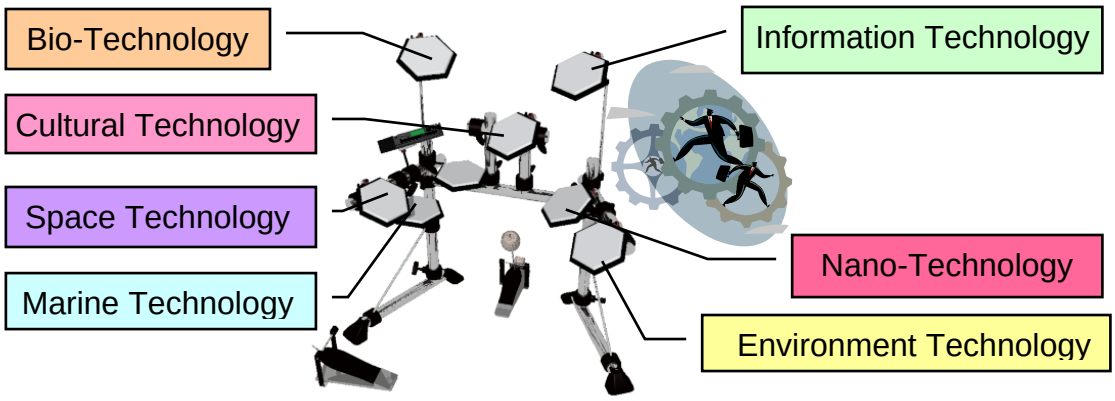
(1) Recognizing the needs of harmonization and standardization of TVET/HRD system for labor market opening and workforce mobility

(2) Restructuring university systems (Japan, Rep. of Korea, Singapore and other countries) for adjustment against technological environment changes, and consideration of demand-driven vocational training system and employment. Employment Rate is one important measure in university ranking.

(3) Creating and pursuing new regional trends with technology evolution such as:

- 7Ts (IT, BT, NT, ET, CT, ST and MT);
- Digital Cocooning and Insperience(Indoor + Experience);
- Web Identity(Avata, Mini-Home ; and so on);
- Consumption Curator;
- Ubitizen(Ubiquitous + Citizen) and Ubiquitous Technology;
- DMB (Digital Multimedia Broadcasting);
- TPS (Triple Play Services: Internet + Tel + Broadcast);

[Figure 10-3] Seven Technologies Influencing Future Labor Market



(4) Creating and pursuing new regional trends in Works, Workforce and Workplace such as:

- Freeter(Free + Arbeiter);
- Increasing freelancers as telecommuters;
- Unstable professionals: MD, Lawyers, CPA;
- Mobilization of workforce across national borders;

In summary, TVET will be the source of inputs which are: skills for entrepreneurship to reduce poverty supplied by vocational training institutes, polytechnics and tertiary institutions; and skills for employability and qualification supplied by higher education institutions to produce outcomes in the form of enhanced skills, enterprising skills, productivity improvement, income generating and economic stability.

Ⅲ. Harmonization and Standardization of HRD Systems for Labor Market Opening and Workforce Mobility

Although reforms were instituted to respond to changing environments, the issue of harmonization and standardization is still a dream needing realization.

1. Pressing Problems in Workforce Mobility with Labor Market Opening

Mobilization of workforce across national borders world is fast becoming not only a natural phenomenon, but also as something good for the world. The movement of people and knowledge/technology is seen as the real driver and cause of globalization, generating institutional and social changes that are taking place within and beyond national borders.

However, the TVET workforce is faced with a lot of problems due to disparity of skills and competencies with the optimum qualifications required in Asia and the Pacific region. Therefore it is a growing demand to make standardization and harmonization of TVET systems through accreditation and certification.

[Figure 10-4] Causes and Problems in Workforce Mobility

Causes	Problems
Most TVET Institutions are not accredited and certified	A Hazard of Workforce Mobilization across Borders
Un-equivalent Qualification Systems	Discrepancy in Labor Markets
Un-unified Accreditation & Certification Systems even if accredited and certified by private western or national body	No Standard Skills and No Harmony in Qualification Systems
Un-recognized qualification in the region except some cases	Threatening Improvement of TVET Systems

2. Labor Market Demands with Workforce Mobility

Many countries have undergone major programs of structural adjustment in order to change skills demanded by enterprises and the economy. Reforms were instituted to respond to changing economic environment because of isolation from market forces, rigid centralization, and limited institutional autonomy. In Chile, South Africa and Australia, reforms were built on principles of reduced public involvement in training provision, partnership in governance, and increased reliance on market mechanisms. The following are the reforms made in the Asia Pacific countries(Park 2005):

<Table 10-1> Recent Major Reforms of Asia and the Pacific Regional HRD System

Reforms	Description of Reforms
Standard Skills	Some countries are moving toward national qualifications systems as a means to raise occupational standards and facilitate labor mobility. These standards, benchmarked from existing national standards describe the abilities, skills, knowledge, and operations to be possessed by an individual for a specific occupation, industrial process, or technological application. The recognition of national skill competencies/ qualifications in the region and in the world will spur the free movement of skills while focusing on common vocational standards. This would help the workers increase their marketability and job mobility through demonstrating the skills they have acquired in any context. It can also help the industries boost their overall productivity and competitiveness by applying standards of excellence.

Reforms	Description of Reforms
Accreditation and Certification	A regional accreditation and certification system is in response to the inevitable transmigration of workers and emergence of multicultural environment. With this initiative, vocational and technical education training providers in the member countries are encouraged to adapt the best international practices for their institutions.
Labor Market Information Needs	The Labor Market Information System(LMIS) tracks and analyzes the economy of a country by determining future workforce training needs, identifying the availability of labor, verifying the prevailing wage rates, and discovering potential markets. Being able to provide these data, then unemployment will be reduced and employment will be generated. LMIS also finds its value to local and regional planners in the academe as well as in the industries and businesses to help target locations, seek ways of attracting and retaining skilled workers, or assess the scope and size of potential markets. Labor unions also find these studies useful for determining comparable wage and compensation levels, local working conditions, and training needs.
Enhancing International Networks	The development of sustainable human resources requires a concerted efforts and approaches from all national, regional and international training organizations. With globalizations of markets and economies, the challenges are not specific to one country or one institution. Hence strong network and partnership among the regional and international organization and institutions is required in the development of sustainable human resources.
Employment Supporting Systems	Employment supporting system is a network system that provides employment, education, and training services. Often established as one-stop career centers, these provide wealth of information and assistance in finding a job; information and services related to employment, training, and education links; and information and claims on unemployment insurance, disability insurance, employment and training, labor market information, employment taxes.

3. Establishment of Asia and the Pacific Regional Accreditation and Certification Commission

On 3rd December 2004, Sixteen Asia and Pacific governments convened and agreed to establish a regional accreditation and certification commission through Seoul Declaration 2004. Named as Asia Pacific Accreditation and Certification Commission(APACC), the Commission aims to achieve equivalence, harmonization and standardization of TVET.

As a regional body, APACC is determined to recognize qualifications and standards among countries thereby facilitating labor force mobility across the region. Moreover, it intends to produce a flexible and well-qualified labor market, one with rich and diversified skills by accrediting and certifying quality TVET institutions. It spells the roles of every participating country and defines the operations in the context of a regional accreditation commission.

In line with this mandate, APACC started to plan and manage all matters pertaining to the pre-operationalization of the Commission. Also APACC developed four major accreditation documents such as the Accreditation Manual, Survey Instrument for Technical Education, Handbook for Accreditors, and Regional Skills Standards. In addition, it provided access through the creation of a dedicated APACC website(http://www.apacc4hrd.org).

APACC has engaged the services of technical experts in the field and gathered relevant people from the representative governments to study, analyze and firm up a set of policies and guidelines that will be applicable to the region. To date, APACC is now in the process of services in Asia and the Pacific region.

All of these are meant to ensure quality and excellence in technician education and training in the region. With this initiative, TVET providers in the member countries are encouraged to adapt the best international practices for their institutions as a bridge between advanced and developing countries in order to develop human resources.

Ⅳ. Building e-Highways for Human Resources Management toward Global Labor Market

1. Career Development Systems

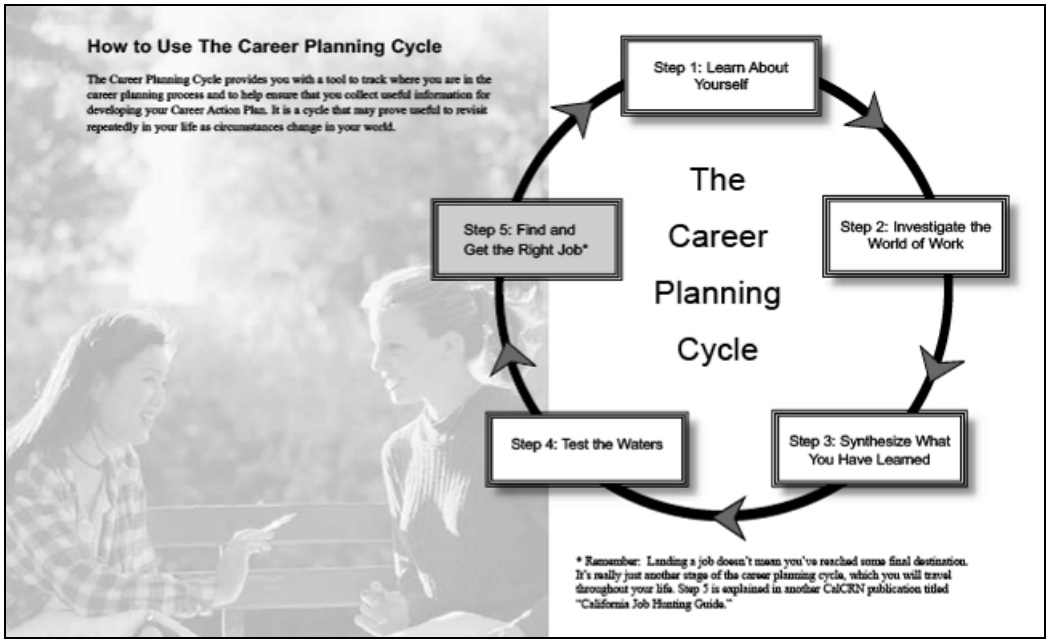
Enhancing and integrating the career development systems have become ever more

important for individuals, societies, nations, and the world. They need to be enhanced and integrated from national levels to regional/global levels through developing, providing, and applying critical knowledge and technology. Students and graduates would manage their careers through well-organized resource highway.

1) Kiosks as Career Net

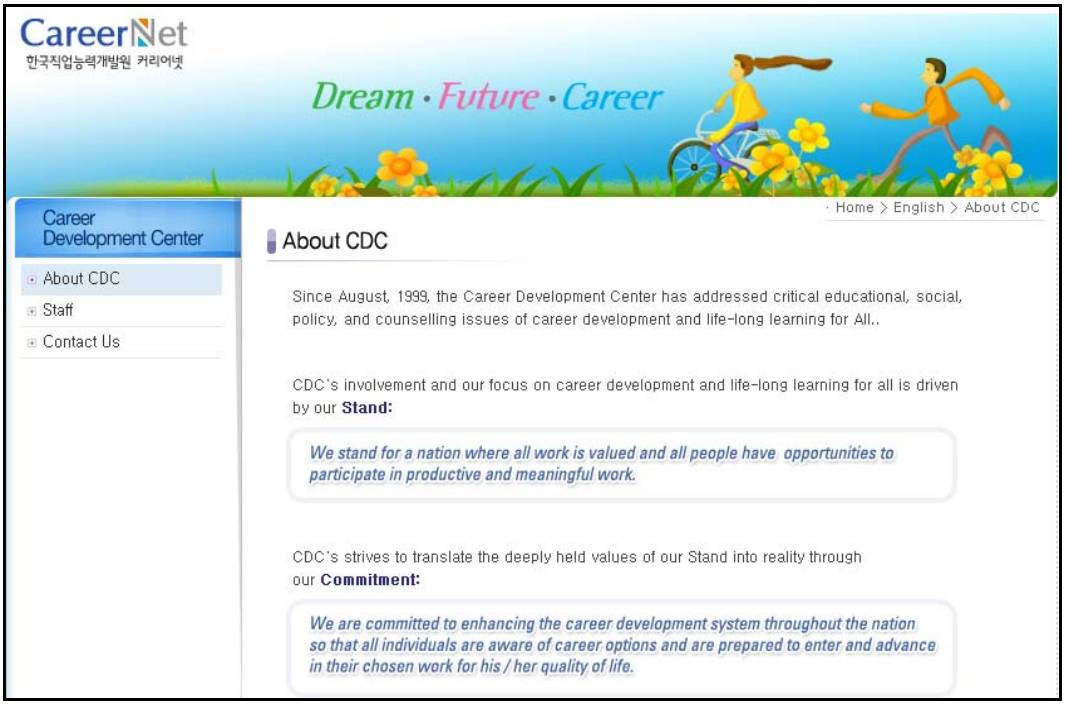
Kiosks are stop and shop places where a trainee could be guided in choosing a degree or career path, exploring occupations, learning about institutions, and other education resources. They are career nets that could give information in applying to institutions, contacting recruiters, obtaining scholarships & financial aid, and other issues relating to vocational education and training. They also offer knowledge database in the form of occupational dictionary, domestic and overseas occupation information, world of works, university and department information and qualification information. They also function for career counseling and psychological testing.

[Figure 10-5] California Career Planning Guide 2003-2005



(http:// www.learning4liferesources.com**)**

[Figure 10-6] An Example of *CareerNet* for Students with Career Channel, Career DB, Career Counseling, Psychological Test, and Career Development Center developed by KRIVET, Rep. of Korea



(http://www.careernet.re.kr/career/engcdc.do)

Target groups may be: students in the primary schools, middle schools, high schools, universities and colleges and secondary technical schools; adults; and teachers and researchers. [Figure 10-6] and [Figure 10-7] are examples of the career planning cycle and the Career Net.

2. Employment Supporting Systems

Employment supporting system is a network system that provides employment, education, and training services. Often established as one-stop career centers, these provide wealth of information and assistance in finding a job; information and services related to employment, training, and education links; and information and claims on unemployment insurance, disability insurance, employment and training, labor market information, employment taxes. An example of a WorkNet is presented in [Figure 10-8].

[Figure 10-7] An Example of *WorkNet* for Job Hunters developed by Employment Development Department, State of California(http://www.edd.ca.gov/eddjs.asp)

3. Concept of Human Resource Highway

The human resource highway should be equipped with information and communication devices that would link distant partners, store data, share information and news as quickly as possible. The web-based human resource highway should connect all career nets for students and work/job nets for graduates openly and flexibly.

The human resource highway is composed of physical structure (road system, cars, traffic regulations and drivers) and the e-highway (career and jobnet systems). The interplay of these components can build a highway that can transport technologies and services. Elements of the human resource highway are explained in the ensuing discussions:

1) The Environment as the Road Systems

One factor with so many variations is the road or the diversity of the environment.

The general environment can be dusty or muddy, calm and serene, cool and soothing, uncomfortable, peaceful, appropriate and many more that can affect the driving process. Another dimension is the road safety conditions: the physical set-up of the road, the road lights, traffic lights, camera, asphalted or not, etc. Correspondingly, this refers to the external environmental factors and physical plant and facilities that would somehow affect the transport of services from one end of the highway to the other. Investment in priority infrastructure will maximize development while minimizing development costs.

2) Package of Technologies as Good Cars

Technology is required to ensure that the extra energy of promoting, facilitating and coordinating the human resource highway is available. The good cars are the package of technologies that would be utilized to provide training and impact the necessary skills and competencies leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant. The good cars would also mean state-of-the-art and not innovative technologies characterized by durability, environmental friendliness, reusability, easy maintenance, decentralized control and diversity.

3) Policies and Guidelines as Traffic Regulations.

Effective governance is essential to achieving sustainable growth and ensuring its benefits are distributed widely and equitable. Likened to traffic regulations, the formulation of policies and guidelines serve is crucial to effective governance. Traffic regulations are developed for the safety of the both the passengers and the technology. In the same manner, policies and guidelines are formulated to serve as our guide in building a human resource highway which would serve the purpose of producing trained human resources maximizing package of technology delivered for him.

4) Human Resources as Drivers

In the human resource highway, the driver is the knowledgeable one. He is burdened with guiding and directing his passengers while they traverse the highway. In order to make a good journey, it is essential to ensure that human resources acquire and constantly improve their capacity and skills. It will be important to develop capacity building and training: communication and awareness raising; planning, management and evaluation, and training and re-training. The driver must be oriented on the materials he will use in driving, the methods and tools needed.

Ⅴ. Conclusion

According to technological environmental change and progress of globalization, the nature of work and the workplace have got changed. Therefore enhancing and integrating the career development systems have become ever more important for individuals, societies, nations, and the world.

Technical and vocational education and training is the master key that opens the door to the world of work and the economy, alleviate poverty, save the environment and improve the quality of life. It transcends the formal system. It may take two other streams: polytechnics and lifelong learning. Most of Asia and the Pacific countries combine the three streams with the national government acting as the major provider of finances.

Like other aspects of education, TVET has to address the issues of relevance, efficiency and effectiveness. It is still ridden with criticisms concerning harmony and standards, and factors that may have caused disparity include the negative social attitude towards TVET, low enrolment size in areas where TVET is needed, the minimal role of the private sectors and the high cost of vocational education coupled with its low budget allocation.

To bridge human resources development systems for more cooperation and collaboration

between advanced and developing countries, we have recognized a well-organized human resource highways that would provide labor market information with advanced knowledge and technology to TVET students, graduates, and job seekers who can move about freely in search for knowledge or jobs in global labor market. The first component of the human resource highway is e-highway which is turn is made up of the network or the linking system (job net and work net) and the kiosks as career net. These would contain information that would give information in applying to institutions, contacting recruiters, obtaining scholarships & financial aid, and other issues relating to vocational education and training. The second component is the physical human resource highway which is comprised of the environment as the road systems, the package of technologies as good cars, policies and guidelines as traffic regulations, and human resources as drivers.

Also we emphasize the needs of harmonization and standardization HRD systems for labor market opening and workforce mobility between advanced and developing countries before building these human resource highways.

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Chapter 11

Bridging HRD in Countries at Different Stages of Development

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Ⅰ. Introduction

The fact that this book is being published in Korea by the Korean Research Institute for Vocational Education and Training in English, not Korean, is a subtle (or maybe not so subtle) indication of how the cultural value of language has been subsumed by a dominant culture. This is not to argue that we can ignore the dominance of English in business and social communities worldwide. But it does indicate what can happen when the bridge between cultures is seen as a one-way street! No research institution in the U.S. would ever consider such a publication in Korean.

Jean Malaurie, Director of the Centre of Arctic Studies in Paris, wrote the Preface to *An African in Greenland*(Kpomassie, 1981; translated by Malaurie, 1983). The book is about the experiences of a young Togolese man who fulfills a lifelong dream to travel to Greenland to discover what it would be like for a black man to experience the "Eskimos" (Inuit). Malaurie wrote:

> Times have changed, progress has come—though in those villages [in Greenland] it has been in a backward direction. Kpomassie was struck by the kindness, the charm…of this people. In many ways, he finds that the Eskimos have a more advanced culture and gentler manners than the Togolese. Perhaps when this book was being written he was still unaware of the present-day violence of the Greenlanders, degraded by a blind, accelerated Westernization…..[the] young generation is awakening to its rights, rebelling in search of a classless society grappling with the

> future and the difficult problems it holds: alcoholism, industrial development, the defense of native languages… (no page number)

It seems that any attempt to transfer technology from countries at a higher stage of development as it is traditionally understood than the one to which it is transferred will confront problems just like those faced by the Greenlanders! Is there a way that this situation can be reframed so there is a movement in both directions, enhancing both countries without either having to make such sacrifices? This is the question that will be explored in this paper.

Ⅱ. The Metaphor of the Bridge

We use the word, bridging, often without really thinking about its metaphoric meaning. In HRD, we frequently talk about bridging theory and practice, and we are careful not to say bridging theory *to* practice. We want to be sure that we underscore the fact that traffic on a bridge can go two ways. Just as we expect and hope that theory will influence practice, so, too, do we understand that practice influences theory. This metaphor is also used in communications theory—we talk about the important of bridging the gap between genders, for example, with the understanding that communication, too, must be two ways. The same is true between parents and children, spouses, supervisors and subordinates, and so on. Thus, when we talk about transfer of knowledge and technology through HRD between countries at different stages of development, as much as possible, HRD's role is to insure that there is two-way traffic on the transfer bridge; if the bridge is one way, we can expect that there will be continuing problems in the less-developed country that may well, ultimately, make things worse for the more-developed country.

As we have learned recently, unfortunately, a bridge is not a sure means of transportation. Within this past year, we have seen the tragedy of a bridge going down in China and one in Minnesota, USA—causing deaths in both cases. Carrying the metaphor of the bridge further, if HRD is the cement that holds the bridge together to allow for two way transfer of knowledge and technology, the imperfections and lack of understanding that we still have about HRD may

cause the smooth transfer between countries to be disrupted with, potentially, tragic outcomes for either or both countries.

A bridge is needed when there is a gulf between two land masses that need to be joined. Likewise, if one has a vision of humanity as having a common vision for a peaceful, collaborative humanity, then we must find a bridge to bring us this unity. A term I have used previously is coopetition—a combination of cooperation and competition(McLean, 2006). The bridge of HRD may allow us to construct this two-way bridge from what would appear to be such an ambiguous perspective.

At least at the present time, the HRD bridge, as HRD is widely understood, has been a one-way bridge. With minor exceptions (such as sociotechnical systems and the Tavistock process), the theory and practice have moved from the U.S. to other countries (even those that are developed). In fact, one could argue that the one-way bridge has been too successful as fads travel quickly from the U.S. to countries like Korea, e.g., action planning, learning organization, intellectual capital, knowledge management, balanced scorecards, competencies, KPIs, and so on, without apparent efforts to indigenize them or determine their value in that culture through empirical research.

Increasingly, research is being conducted in HRD around the world. However, it is frequently the case that instruments used in that research are developed in the U.S. and translated (and, perhaps, modified in minor ways to be culturally appropriate). But the basic constructs are still those identified in a dominant culture that is considerably different from the culture of the country in which it is used. We need to start seeing instruments developed in, say, Korea, being translated into English and modified for the U.S. culture. To the best of my knowledge, this has not yet happened in the field of HRD.

But we are starting to see this turn around. The McLean and Johannsen(2006) publication on *Worldviews of Adult Learning in the Workplace* exposed readers to many different views of HRD from around the world. The international "Views from the Summit" sessions at the AHRD conference in the Americas in 2007 and plans for another in 2008 have showcased

understandings of HRD from many cultural perspectives. A paper presented at the 2006 European HRD conference presented many case studies from around the world indicating how HRD has been used for community and societal development purposes(McLean, Kuo, Budhwani, & Yamnill, 2006). All of these are positive indications that research emanating from countries other than the U.S. has been expanding how HRD is viewed.

There are both theories and practices that have been developed in Asia that have migrated to the west. Notable among these are Total Quality Management(TQM) (but much of this was done under the mentorship of gurus from the U.S.), quality circles, the fishbone diagram for identifying root causes of problems(the Ishikawa diagram), meditation and reflection (perhaps emanating from Buddhist practices) that might be influencing the increasing interest in spirituality in the workplace in the U.S., and so on. This does not mean that there has been no development of indigenous theories outside of the U.S. But the question is, why aren't those theories finding their way into global literature and practice? For example, with thousands of years of development of Confucianism, is there nothing that we can learn in the U.S. about harmony, the importance of education, and so on? Rather, we tend to focus more on the negative influence of Confucianism in modern Asia.

In the definitional arena, there have been some small efforts. For example, McLean and McLean's(2001) definition of HRD was based on research in 15 countries on the meaning of HRD in those countries. This definition led to McLean's(2006) definition of organization development(OD). Wang and McLean(2007) defined International HRD from two contrasting cultural perspectives—China and Canada. Other examples may exist but have not been highlighted in the literature.

Just as we are now increasingly sensitive to beginning to repair the hundreds of faulty bridges in the U.S., it is now time for us to begin repairing those bridges of HRD that have become one-way streets instead of two-way. The rest of this paper will explore why one-way HRD bridges exist and suggest what is needed to create two-way traffic.

Ⅲ. Why Are There One-Way HRD Bridges?

Without outside interference (such as erecting one-way signs), traffic on a bridge is naturally two ways. So, what are the problems that have sustained the one-way traffic on the bridge of HRD as is basically the case in the world today?

First, there may be too much knowledge being shared only in local or country-specific journals that, then, never reaches the global community in HRD. There are many factors here. First is the limited circulation of such localized journals. Second is the issue of language. While English has become the lingua franca of higher education, there is very little expectation that others outside of Thailand, Korea, Malaysia, and so on, will understand their languages. So anything published in those languages are lost to the rest of the world unless they are subsequently incorporated into publications in mainstream English-language journals. The third problem with such journals is that they are often not indexed in the indices typically used by researchers, thus effectively burying them. Further, when researchers do have ideas to share, their English skills are often insufficient to allow them to compete in the international marketplace to get their articles accepted in refereed journals. When universities and institutes do not provide support to help authors with their English, it is not surprising that authors often fail to get their manuscripts accepted.

Second, many people from developing countries are receiving their education in HRD in the U.S., the UK, and Australia. It would appear that the norm of such programs is not to encourage development of theories or practices compatible with the student's culture. Instead, there is an almost fanatical requirement of many faculty members that there is one, and only one, right way to view the field. These concepts are engrained in the students' way of thinking, resulting in replication of what was learned when the students return home, rather than being given the right, opportunity, or obligation to create theories and practices compatible with their own cultural context. These students return home and become the next generation of professors, thus falling into the trap of replicating both theories and practice that they learned in overseas educational contexts. And so the cycle continues.

A third problem might be the power distance that exists in many Asian cultures. With power distance in place, there is high risk in challenging traditions; it is especially difficult to challenge a professor! Thus, creativity and innovation are abandoned in favor of conformity and compliance.

The educational system itself may be a problem. The goal of many educational systems in Asia is to encourage memorization and regurgitation. Students who do this well excel in education and are given the opportunity to study in US or UK universities or the very best of the universities in their country. Thus, the reward mechanism is designed for rote learning rather than the creativity required in producing new theories or new practices. Historically, it is not even acceptable to question the teacher, let along to challenge him or her with a new concept or theory, especially if it contradicts that teacher's perspective.

Fifth, financial resources may be insufficient to allow faculty to travel to conferences where they can share their findings and find colleagues in other countries to help them tease out emerging, developing theories. While faculty from more developed countries often have personal resources to supplement institutional resources, such may not be the case for faculty from many developing countries.

A sixth problem is the cult of personality. The speaking circuit is almost always populated by authors who have written best-selling books in English. This effectively shuts out authors who have not published in English. A further concern is that scholars from cultures in which charisma is not valued do not develop charismatic delivery styles. Thus, they are given fewer opportunities to take the spotlight at conferences or workshops, even in their own cultures. Even there, the same popular authors are invited to present.

Another problem may well be that many of these countries still have formal and sometimes unspoken policies in place that effectively discriminate against those who could make a difference in the creation of innovative theory, especially women and those over the age of 40. Cronyism is still alive and well in many developing countries, ensuring that those with previous relationships or those from the right university, i.e., the university that has the greatest prestige

or the university from which those on the search committee graduated.

Time is another factor. HRD as we now know it in the United States is less than 40 years old; and in many developing countries it is much younger than that. There are those who argue that we do not have any unique HRD theories, though it is difficult for me to understand this. Nevertheless, if we struggle with identifying HRD theories in the U.S., how much more difficult is it in countries that have had HRD for much less time than this and are just beginning to develop academic programs in HRD?

The ninth factor emerges from the eighth factor. In countries where HRD is still developing, there is a lack of scholar mass, i.e., there are few scholars in the field. With a lack of scholar mass, there are few people who are focusing on research and theory development in HRD. So it should not be surprising that developing countries are not a source of new theories, concepts, and practices in HRD.

There are probably many more explanations for the lack of theories evolving outside of the United States to provide returning traffic on the bridge. The next section will explore possibilities for enhancing two-way traffic on the bridge.

Ⅳ. Creating Two-Way HRD Bridges

If this assessment is accurate, what must be done in HRD to begin the flow of knowledge and practices in HRD from Asia, for example, to the Americas? While this is not an easy question to answer, here are some possible responses.

First, there needs to be a greater exchange of students and faculty in HRD across country boundaries. While there has been increasing emphasis on study abroad in the U.S. recently, and there has been a slow growth in U.S. faculty teaching in other countries, there has been less emphasis on faculty from other countries serving as visiting faculty in U.S. universities, though there are those who have earned terminal degrees in the U.S. who have chosen to stay. Not only would this give additional outlets to faculty on both sides of the bridge, but it would create additional opportunities for collaborative research that would allow for the development of new

ideas that are the result of the synergistic interaction of scholars from different cultural perspectives.

A second possibility is for an organization like KRIVET, AHRD, UFHRD, or some other organization focused on scholarship within HRD to undertake the creation of a data base of research in HRD regardless of the language in which it was first created. This will be expensive—it will require research to identify journals dealing with HRD-related publications, obtaining partnerships to gather such publications, providing translation services for those publications, and indexing them for easy searching. Yet, the potential output from such a project is huge. It will provide opportunities to gather and make available a much larger body of knowledge in HRD than is currently possible.

Universities and scholarly journals need to take a much more active role in providing support to authors for whom English is a second language to improve the possibilities of having their manuscripts accepted and published. At present, there is not an even playing field for authors with different language backgrounds. That situation must change if we hope to enhance the scope and nature of the research available to the field. Additionally, greater resources are needed to support scholars who are exploring critical and paradigm-challenging research to conduct their research and to attend international conferences to assist in the dissemination of those concepts. More international members are also needed on the boards of our professional organizations to provide a greater global context in developing our professional efforts.

The international HRD conferences should continue to encourage and expand their offering of symposia that focus on the creation of HRD theory, drawing on scholars from many different cultures. Not only is this likely to increase the contributions of scholars from around the world, but it will also encourage a continuing focus on creating HRD theory.

Perhaps ethics statements of professional organizations, such as the American Psychological Association and the Academy of Human Resource Development, need to be modified to allow for the publication of an article in both the native language and in English. This would encourage authors to make their work available in multiple languages.

Some of the solution should come about simply through the passage of time. As more and more joint programs are established around the world and as more and more graduate students then decide to stay at home to pursue their graduate work or to return home as faculty in those emerging programs, a body of indigenous knowledge is almost certain to emerge. Further, as the process of globalization continues, power distance issues that currently exist in much of Asia will continue to be modified, leading to greater possibilities of young scholars challenging existing thought, theory, and scholarship in their countries. Scholarship mass will grow, contributing to a greater probability of new concepts emerging. In our immediate gratification cultures, it is difficult to say, simply, be patient! Yet, to some degree, that may be the most realistic solution to this problem.

Many nations, including the United States, are actively concerned with educational reform. The key to excellence in education is to find some mid-point between excellence in the sciences and mathematics as in many countries of Asia and the creative thinking skills typically associated with education in Canada and the United States. Greater emphasis on creative thinking in cultures that have typically focused on memorization and regurgitation is likely to encourage and foster creative approaches to HRD that are consistent with contributing knowledge about HRD that can be useful and transfer to other cultures.

Ⅴ. Conclusion

The world of HRD is weakened by the over-reliance on research and theories that have emerged primarily from English-speaking countries, led by the United States and the United Kingdom. We know that there is research being done in other countries, and theory building is also occurring. However, the bridge between countries will remain one way unless and until mechanisms are put in place to improve the two-way dissemination of knowledge and information among countries.

It is going to take concrete, deliberate efforts on the part of professional associations throughout the world to improve the probability of this happening. It will also take resources at the country, university, and professional organization levels to provide the mechanisms

necessary for this to occur.

We cannot afford, as a field and as individual economies throughout the world, not to pay attention to what is well becoming the most important resource of every country—its human resources. Coopetition here, as in so many other aspects of our lives in today's world, is critical. We must learn to collaborate (cooperate) to strengthen all of our economies so we can better compete. As stated in the McLean and McLean(2001) definition, we must do this for the benefit of "all humanity"(p. 322) and not just the ethnocentric benefit of a specific country.

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Chapter 12

Korea's Perspective on the Role of Interlink between Advanced and Developing Countries Regarding HRD

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Ⅰ. Background

Korea is now proudly commanding respect for its 12th largest economy in the world and for turning out the UN Secretary General, the second from Asia. During the 1960s, however, Korea was one of the poorest countries in the world, with per capita income hovering at around $100. Since then, the economic progress has been unprecedented, successfully getting rid of poverty that many developing countries have still been struggling to cope with. Major industries, such as shipbuilding, steel, and automobile, have reached top ten in the world. And there is no doubt that Korea's economic success primarily comes from its emphasis on education and Human Resource Development(HRD henceforth).

In this study, we propose that Korea, as a country which transformed itself from developing countries to developed countries, can play a critical role in interlinking developing with developed countries, particularly with respect to HRD. We also suggest that the analysis of developing and developed countries can properly be done in terms of a System Approach, of which the major elements include environment, input, process, output and feedback. In the analysis, for comparison' sake, we choose some indicators from IMD(2007). Then we go on to explain, in terms of ODA, Korea's current role of interlink between developing and developed countries. Finally, we offer some suggestions for bridging the gap in HRD between developing and developed countries, which are demonstrated in terms of environment, inputs, process, output and feedback.

Ⅱ. Analysis of HRD in Developing and Developed Countries in Terms of a System Approach

1. Analytical framework: A system approach

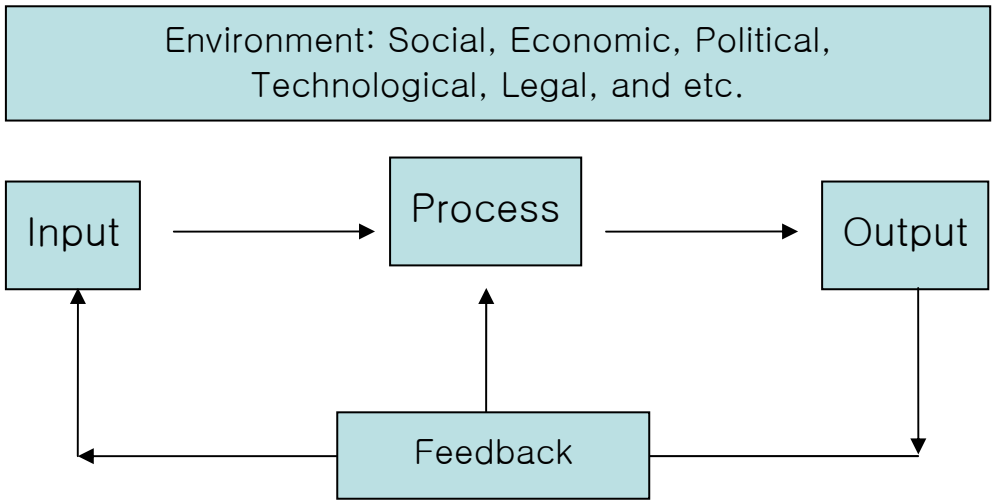
It can be said that virtually everything in this world is based on a system. Human body is composed of a series of systems, such as blood system, neurological system, respiratory system, digestive system and so on. A cell in a human body is a micro system, while the human body itself is a macro system. Family, villages or communities, state or country, and even the earth we live in are also a system. If the earth is a micro system, the solar system can be considered a macro system. The solar system is a micro system from the perspective of the cosmos, which is in turn a macro system. In the perspective of a system approach, everything is a system, which can be divided into a micro and macro system.

A system is defined as a series of components that interact with each other. Components of a system include environment, input, process, output, and feedback. First of all, the environments are composed of political, social, economic, cultural, technological, educational, natural environments and so on. The inputs are composed of the raw components that enter the system. In the case of a tree, for example, the inputs are sunlight, nutrition, water, wind and so on. These inputs are supposed to undergo metabolism, namely a process. The output of the metabolism in a tree results in the growth of branches, flowers and fruits. If a tree in the field does not grow well, we water the tree everyday and provide it with fertilizer. In this way, we give feedback to the tree so that the tree would grow better and come to fruition. We adopt the system approach to analyze HRD between developing and developed countries.

2. Analysis[30]

We diagnose both developing and developed countries in terms of the system approach. Due to the difficulty in comparing them, we utilize IMD(2007) indicators to analyze the system surrounding HRD. The diagram of such an analysis can be drawn as follows:

[Figure 12-1] Analytical framework: A system approach

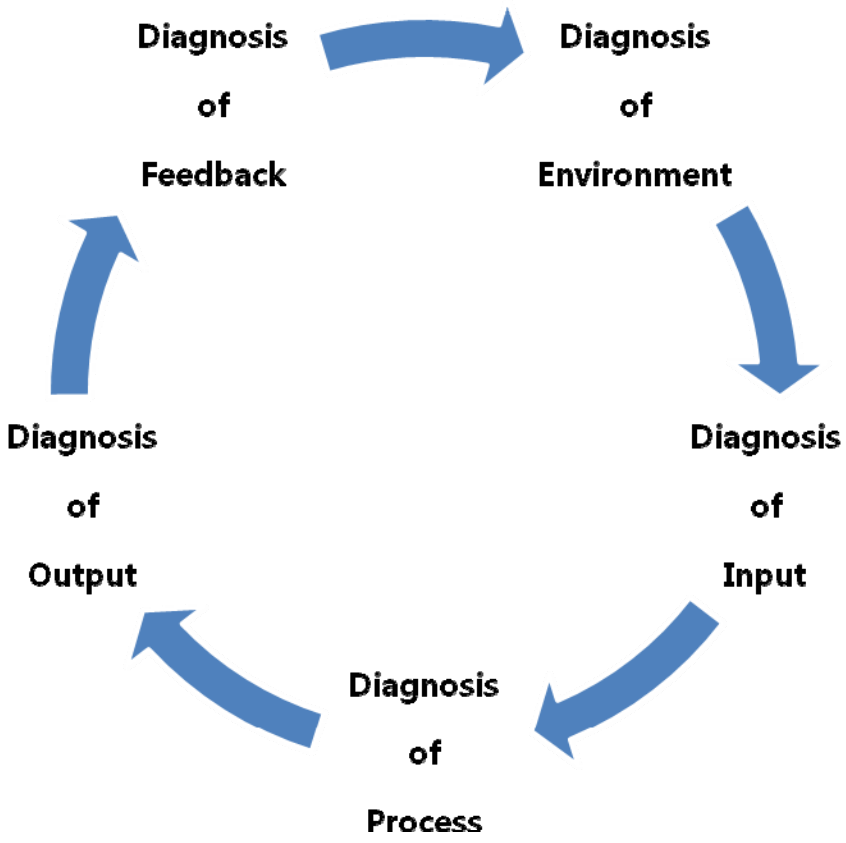


First, we analyze the HRD system in terms of environment. Environmental diagnosis could be done for economic, social, economic, and political aspects. Second, we analyze the HRD system in terms of inputs, such as computers per capita, total expenditure on R&D per capita and total public expenditure on education. Third, we analyze the HRD system in terms of process, such as working hours, labor relations, worker motivation and employee training. Fourth, we analyze the HRD system in terms of output, such as skilled labor, customer satisfaction, entrepreneurship, knowledge transfer, and so on. Finally, we analyze the HRD system in terms of feedback such as brain drain.

In this analysis, we mean 'developed countries' by some OECD countries, while the developing countries by some Asian developing countries.

[30] Some indicators in this analysis were chosen solely on the basis of the author's judgment. There might be a different opinion on whether a particular variable could belong to a different component of a system.

[Figure 12-2] The cycle of system approach



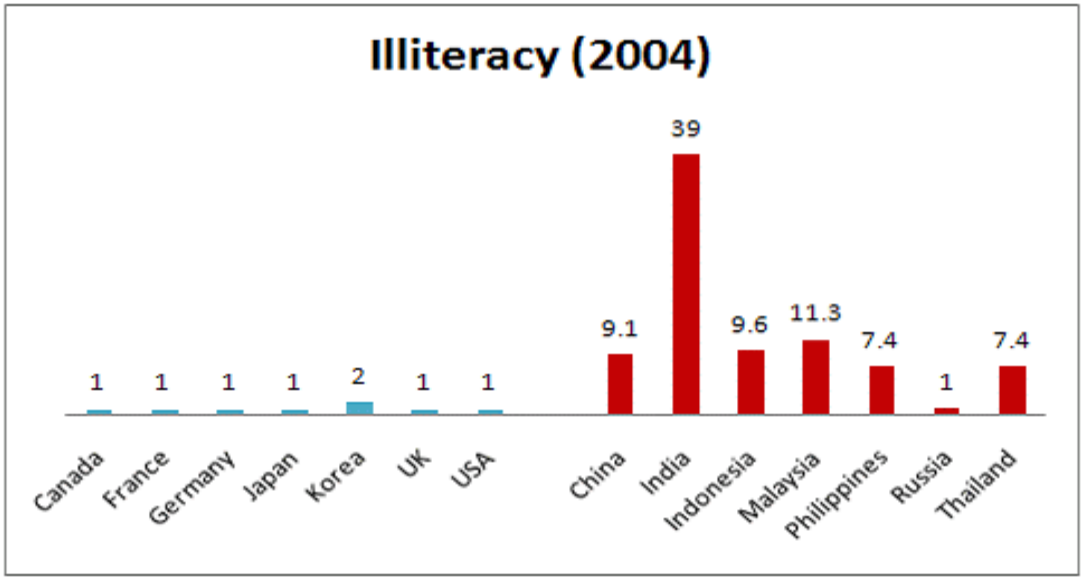
1) Environment

Educational environment: The basic education in developed countries is very strong while that of developing countries is very weak, which is shown by the high illiteracy rate. In developing countries, vocational trainees are required to be 3rd grader in middle school or 6th graders in elementary education. The trainees' low education level makes it difficult to obtain the high level of vocational skills.

Social environment: Security is one of the most concerned areas for people, particularly for foreign investors, residents and tourists. Concerns about security often discourage foreign investors to invest capital in developing countries, lowering industrial as well as manpower demand for vocational trainees. The murders of domestic workers who refuse to pay money to the gangsters often decrease workers' morale to work hard and earn more money.

Economic environment: Currently, policies tend to favor the growth of urban areas. Therefore, thousands of people in rural areas migrate to city areas, raising problems of housing, employment, security and so on.

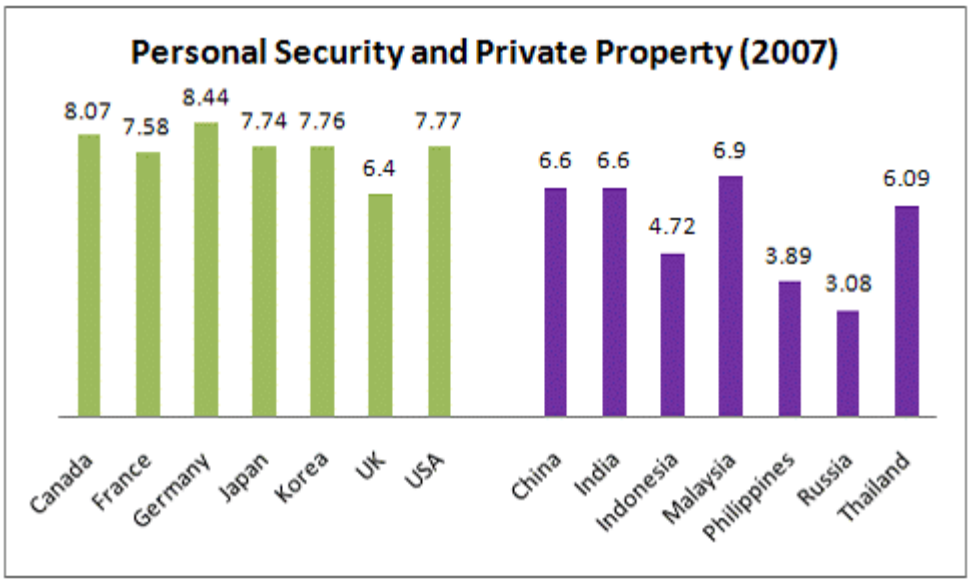
[Figure 12-3] Illiteracy



Note: Adult (over 15 years) illiteracy rate as a percentage of population
Human Development Report 2006, UNESCO, National sources, UNESCO estimates

As the graph shows, except Russia, developing countries are featured by high illiteracy of more than 7%.

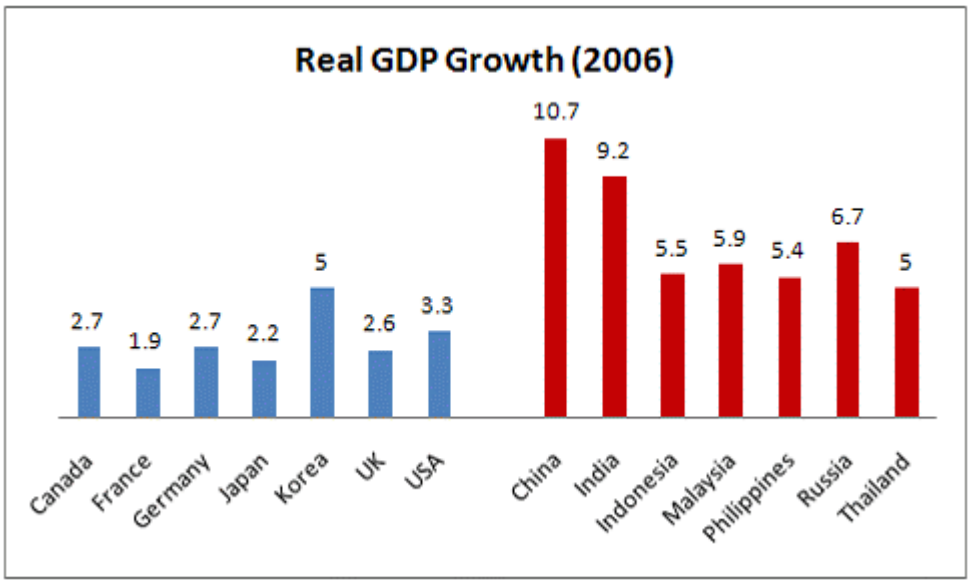
[Figure 12-4] Personal Security and Private Property



The higher the level of property, the more adequately protected.

Compared with OECD, the level of social security in Asian countries are lower.

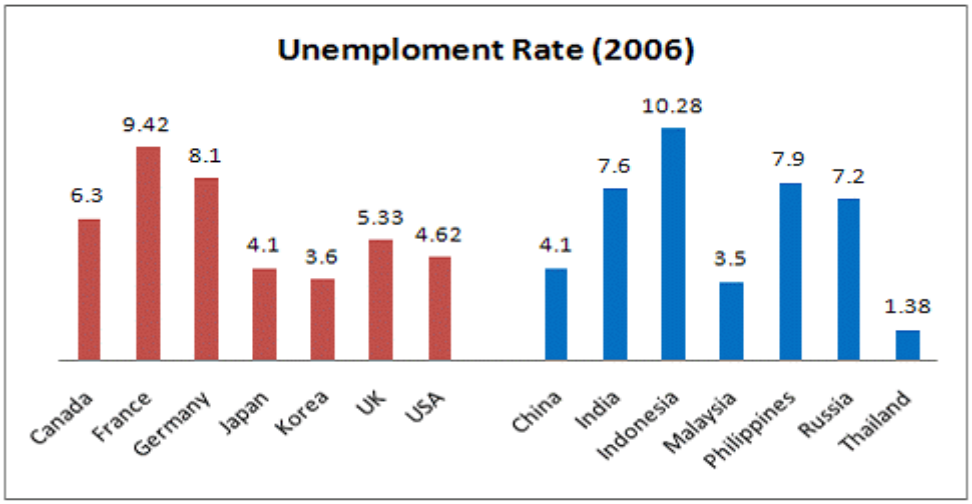
[Figure 12-5] Real GDP Growth



Percentage change, based on national currency in constant prices
Main Economic Indicators match 2007(OECD)
Asian Development Bank Outlook 2007
UN Demographic Database
National Sources, Provisional data or estimates for 2006

The developing countries have higher growth rates than the developing countries.

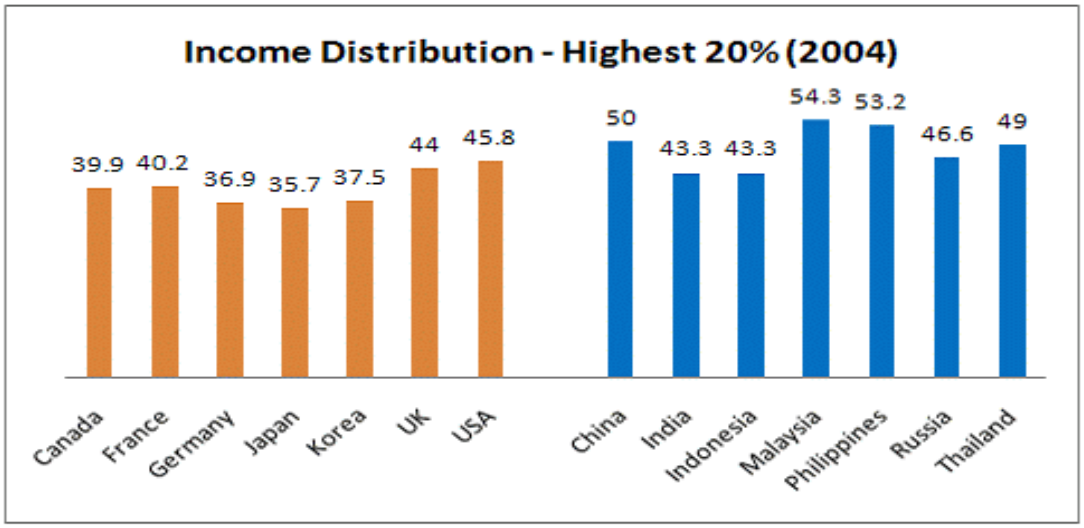
[Figure 12-6] Unemployment Rate



Percentage of labor force
Main Economic Indicators March 2007(OECD)
National sources
Standardized rates for OECD countries. China: registered unemployment rate in urban areas.

Except Thailand, Malaysia and China, the unemployment rate in Asian countries are higher.

[Figure 12-7] Income Distribution - Highest 20%



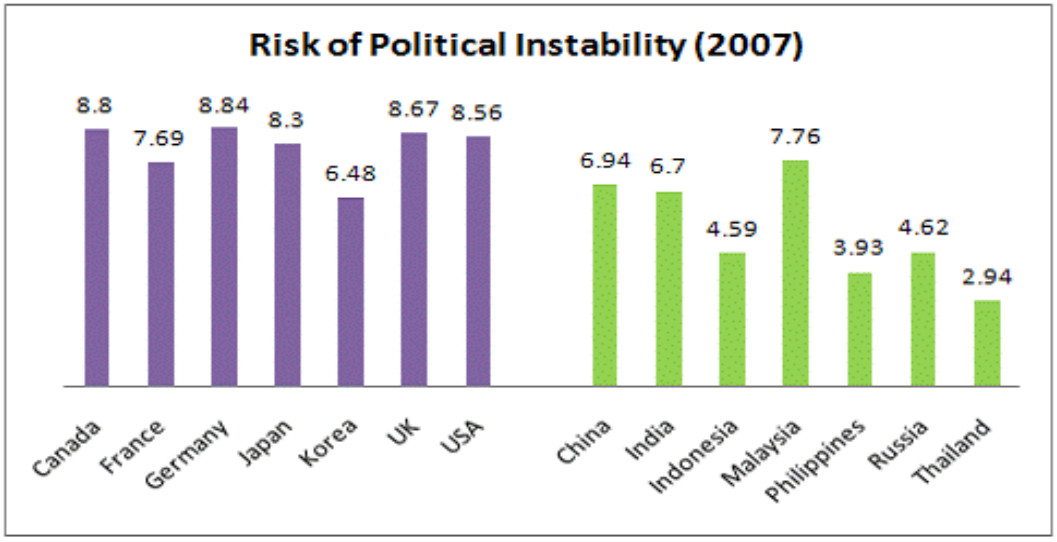
Percentage of household incomes going to highest 20% of households
Human Development Report 2006(UNDP)
Share of income or consumption. Data are for years from 1995 to 2004

The income distribution in the developing Asian countries is less equal than OECD countries.

Education is one of the best solutions to equalize incomes.

Political environment: There has been a serious conflict between the rich and the poor for a long period of time. Further, when the executive and legislative powers shift, the projects and initiatives are discontinued, rendering many resources committed to them completely useless.

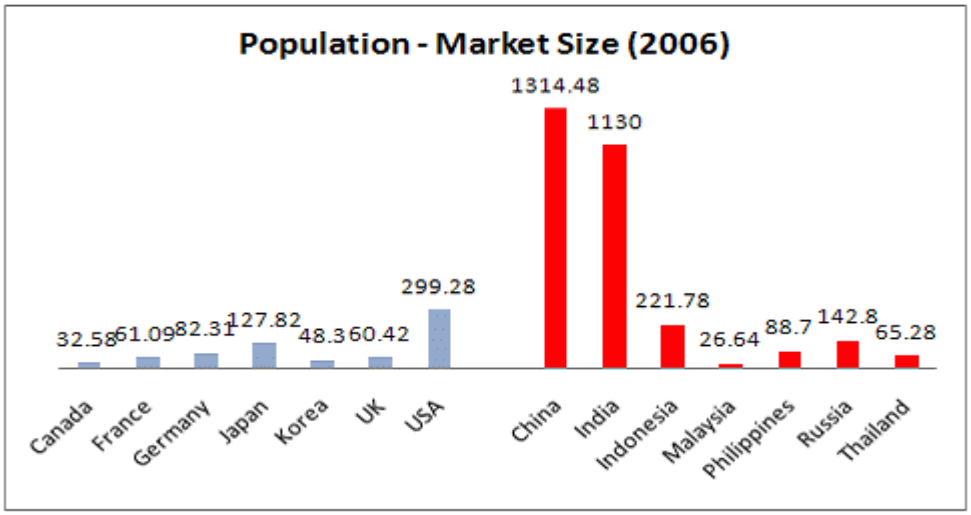
[Figure 12-8] Risk of Political Instability(2007)



The higher the income, the more stable politically.

Except Malaysia, the political stability in Asian countries is lower than OECD countries.

[Figure 12-9] Population - Market Sizes



Estimates in millions
UN Demographic Database
National Sources

Most of the figures for 2006 are estimates based on information for 2005 and projections of growth

China and India have the highest and the second highest ranking in population-market size. It indicates the potential needs for education and HRD.

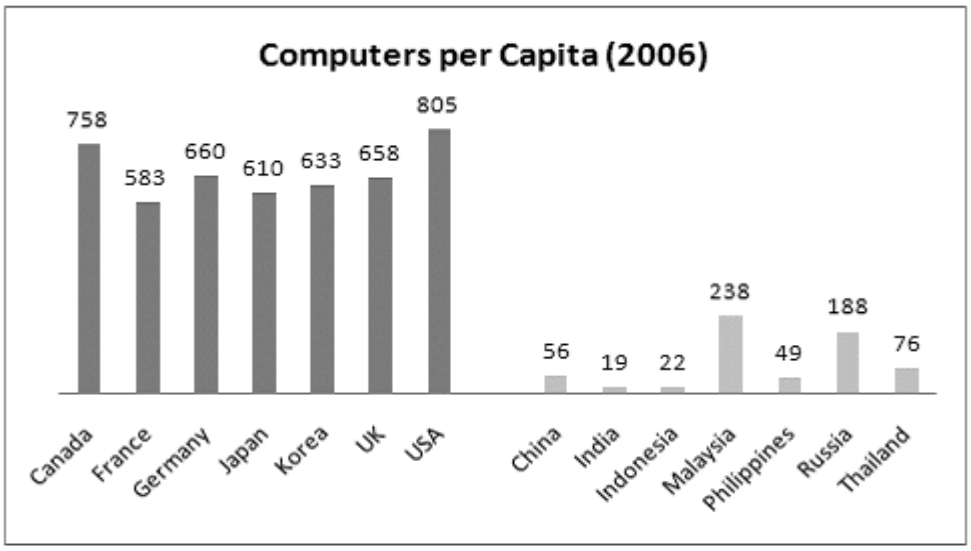
<Table 12-1> Analysis of Environment

	Developing Countries	Developed Countries
Education*	High illiteracy	Low illiteracy
Social*	Personal and private property is not adequately protected	Personal and private property is well protected
Economic	High economic growth	Low economic growth
	Indonesia, Philippines and India → 7% growth rate	France, Germany and Canada → 6-9%
	Highest 20% takes 50%	Highest 20% takes 40%
Political*	Politically unstable	Politically stable
Demographic	Market is strong	China & India –very strong Indonesia & Russia – strong

The significant difference between developing and developed countries in the analysis of environment is educational, social and political environment. The developing countries are featured by high illiteracy, unprotected personal security and private property and unstable politics.

2) Inputs

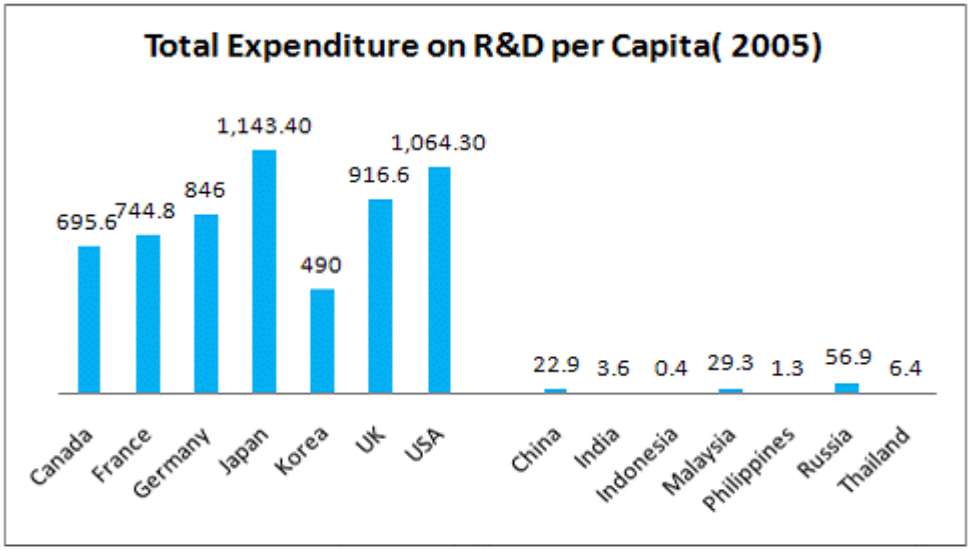
[Figure 12-10] Computers per Capita



Number of computers per 1000 people
Source: Computer Industry Almanac

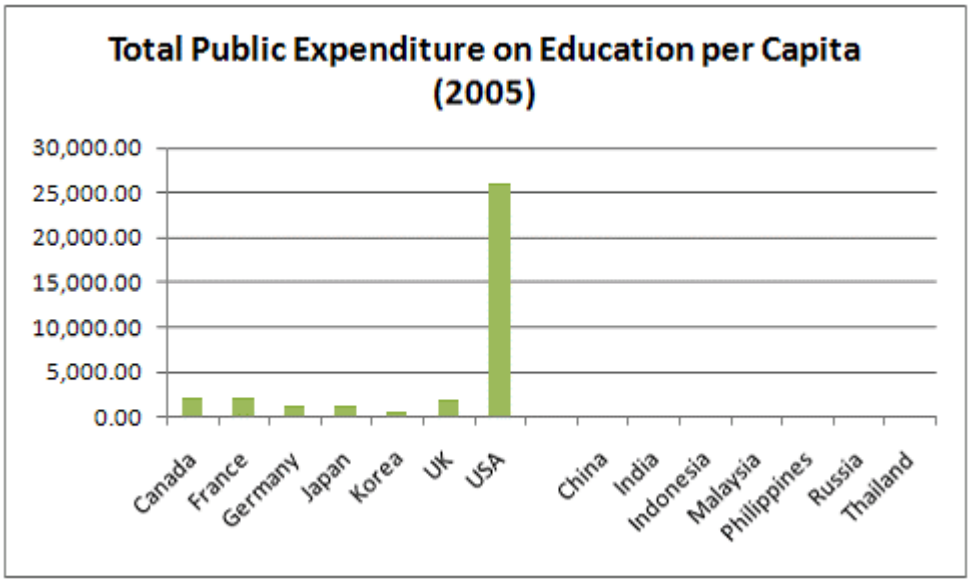
The developed countries have more than 580 computers per 1,000 people while the developing countries less than 80, except Malaysia(238) and Russia(188).

[Figure 12-11] Total Expenditure on R&D per Capita



US$ per capita
Total expenditure on R&D per capita is more than $695, with an exception of Korea$490 for the developed country, while that of the developing countries are less than $57.

[Figure 12-12] Total Public Expenditure on Education per Capita(2006; US$)



US$ per capita
OECD Main Science and Technology Indicators 2/2006
UNESCO Web
National sources

Canada and Germany: national estimate or projection adjusted, if necessary, by the Secretariat to meet OECD norms.
Canada, France and USA: provisional data for most recent year.
Korea: Excluding R and D in the social sciences and humanities.
Malaysia: provisional data for 2004
USA: Excludes most or all capital expenditure.
While the developed countries have more than $1,000, while that of the developing countries have less than $100.

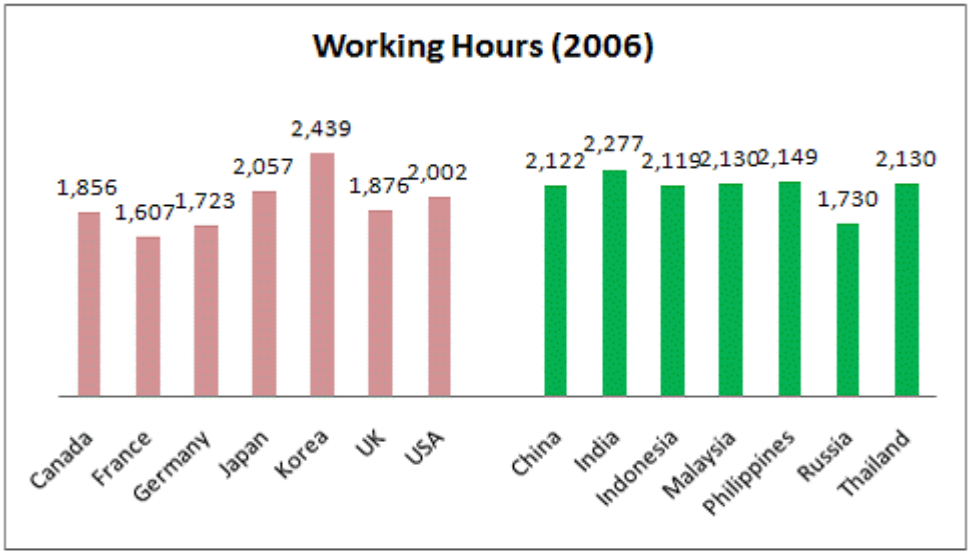
There are striking differences between developing and developed countries in terms of inputs. The developed countries had much more computers per capita and much higher total expenditure on R&D and much higher public education costs than developing countries.

<Table 12-2> Analysis of Inputs

	Developing Countries	Developed Countries
PC per capita	Except Malaysia and Russia, in puts are lower than 100	Most countries have more than 600.
Total Expenditure on R&D per capita	Except Russia, Malaysia and China, less than $10	Most countries have more than $500.
Public Ed Cost per capita	All have far less than $100	Most countries have $1,000

3) Process

[Figure 12-13] Working Hours

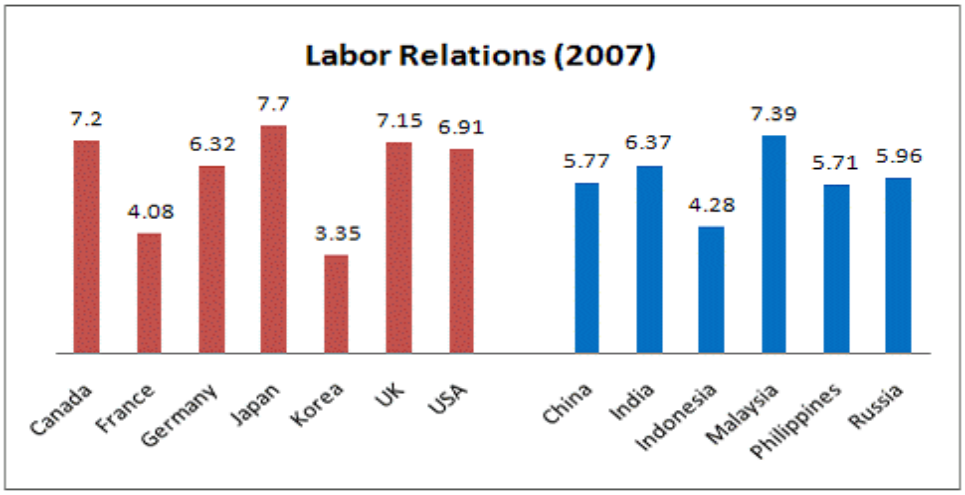


Average number of working hours per year
UBS Prices and Earnings 2006

Annual working hours including vacation (paid) and legal holidays in major cities; weighted average of 13 different professions (product manager, department head, engineer, bus driver, car mechanic, building laborer, skilled industrial worker, cook, bank credit officer, call center agent, personal assistant. female sales assistant, female factory worker).

Except Korea, OCED countries have shorter working hours than Asian countries.

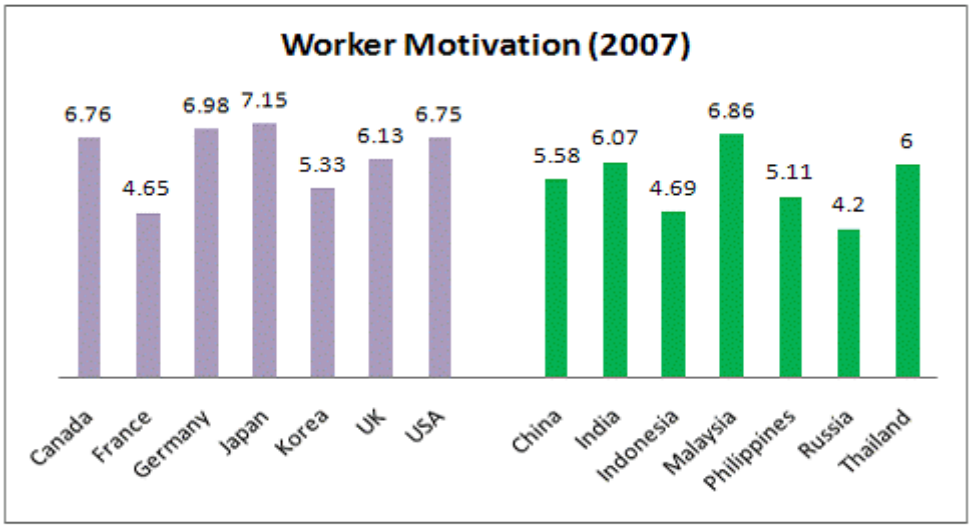
[Figure 12-14] Labor Relations



The higher, the more productive.

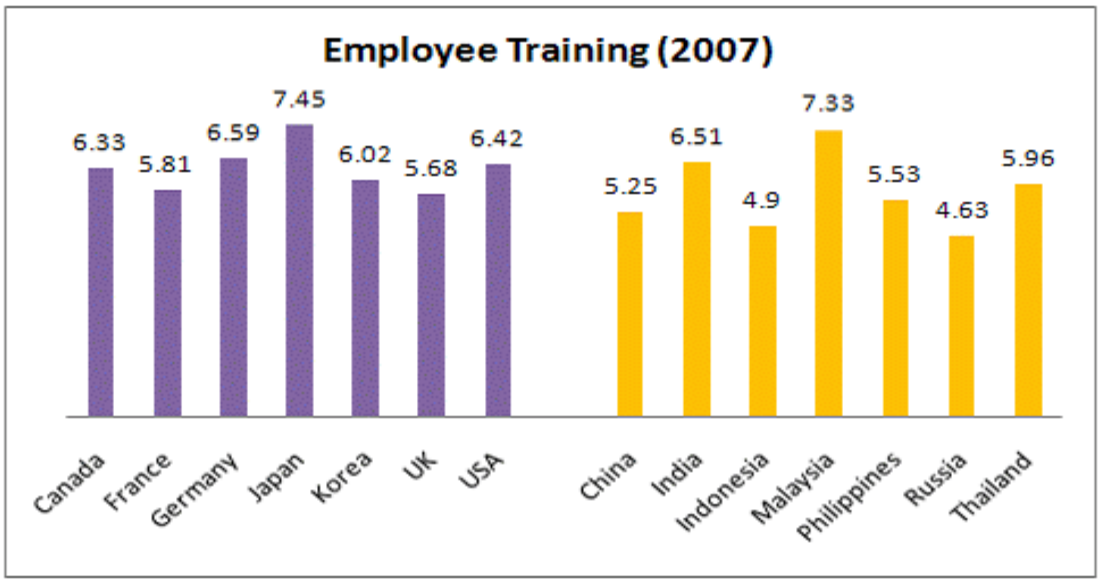
Except Korea and France, OECD countries have more productive labor relations. Labor relations in developing countries look like a weak area.

[Figure 12-15] Worker Motivation



The higher it is, the higher the worker's motivation is.

[Figure 12-16] Employee Training



The higher it is, the higher priority in companies employee training is.

Except Malaysia and India, developing countries are higher than OECE countries.

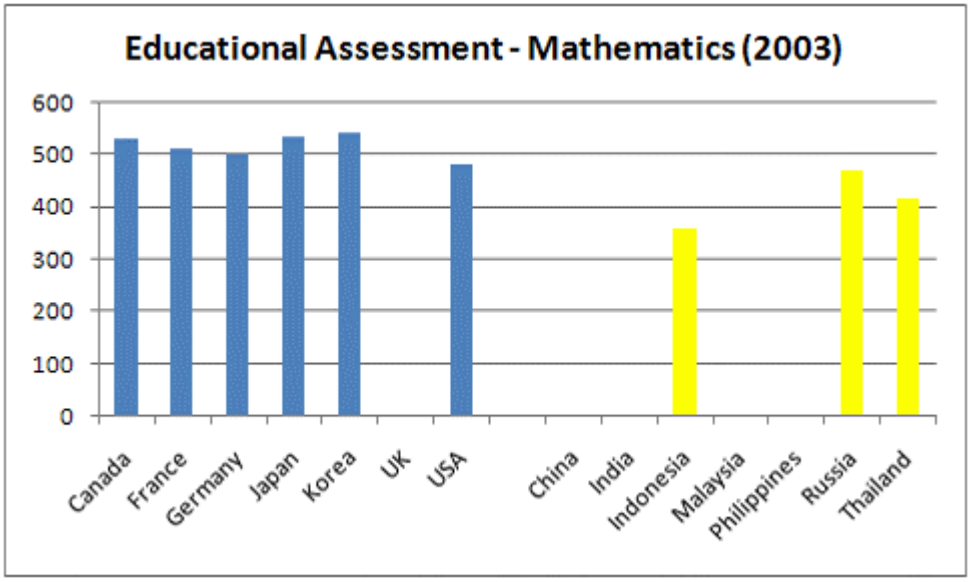
<Table 12-3> Analysis of Process

	Developing Countries	Developed Countries
Working hours	Longer hours India: high 2,277 hrs Russia: low 1,730 hrs	Korea: high 2,439 hrs France: low 1,607 hrs
Labor relations	Indonesia: low 4.28 Malaysia: high 7.39	UK, Japan, UK: 7 France: 4 Korea: 3.35
Worker motivation*	lower	higher
Employee training*	Lower, exception: Malaysia and India and Thailand	higher

The analysis of the process shows that significant differences between developing and developed countries lie in the areas of worker motivation and employee training. While there are little differences in terms of working hours and labor relations, worker motivation and employee training are clearly lower in the developing countries than in the developed countries.

4) Output

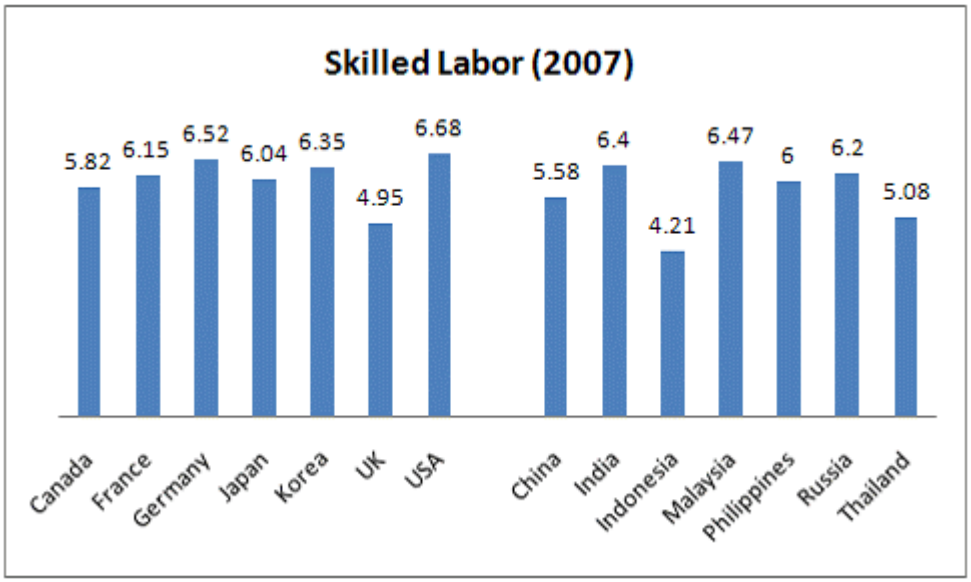
[Figure 12-17] Educational assessment: Mathematics



PISA survey of 15-year olds
Measuring Student Knowledge and Skills
The PISA 2003 assessment of reading, mathematical and scientific literacy
www.pisa.oecd.org

The developed countries have higher scores of math than the developing countries.

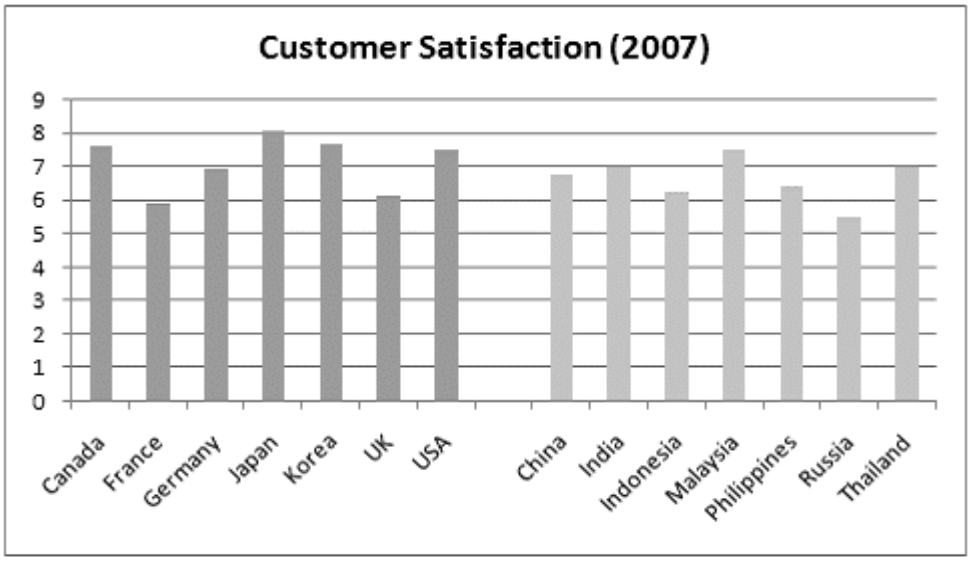
[Figure 12-18] Skilled Labor



The higher it is, the more readily available skilled labor is.

The developed countries have higher availability of skilled labor than the developing countries except UK(4.95). India, Malaysia, Russia and Philippines have higher availability of skilled labor.

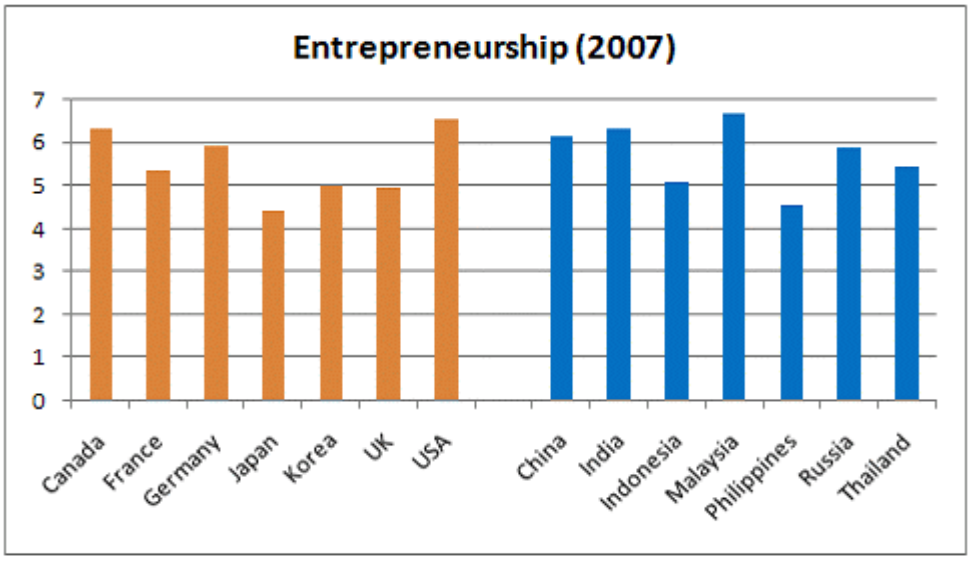
[Figure 12-19] Customer Satisfaction



The higher it is, the more consumer satisfaction is emphasized in companies.

The developed countries have slightly higher CS, with exceptions of France and UK.

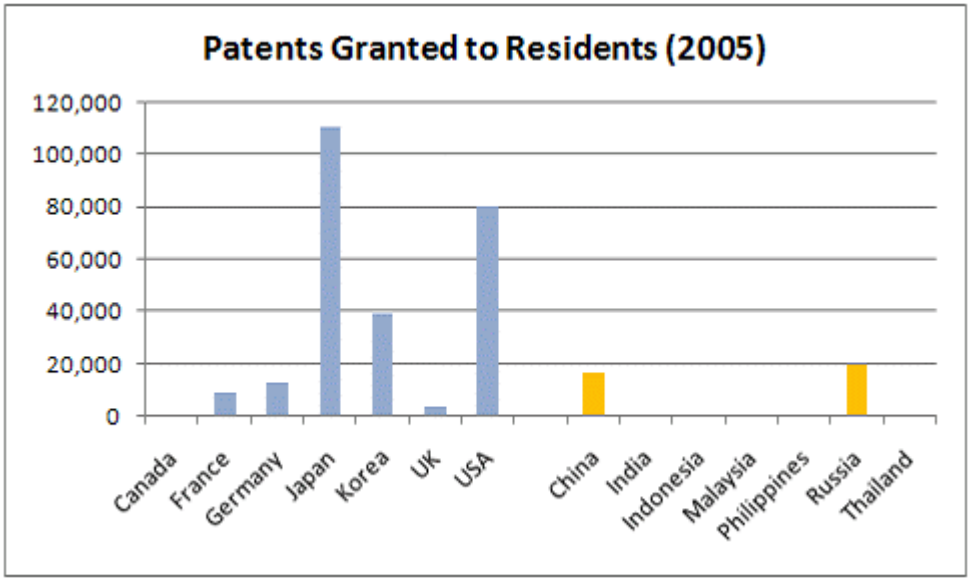
[Figure 12-20] Entrepreneurship



The higher it is, the more widespread the entrepreneurship of managers in business is.

There are no significant differences. Japan, Korea, UK have the same entrepreneurship as Indonesia and Philippines.

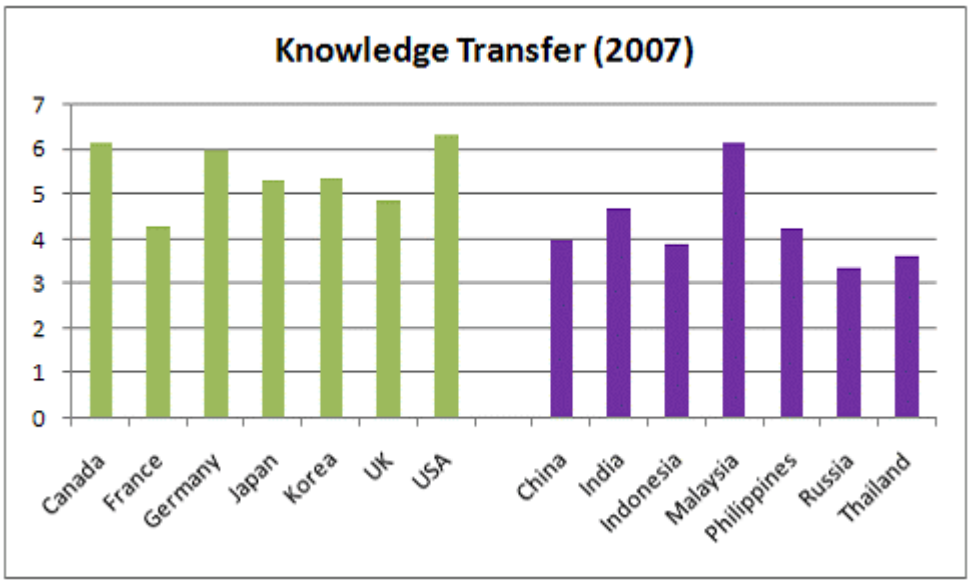
[Figure 12-21] Patents Granted to Residents (2007)



The developed countries have higher ratios than the developing countries.

The ratios of China and Russia are higher than those of UK, France and Canada.

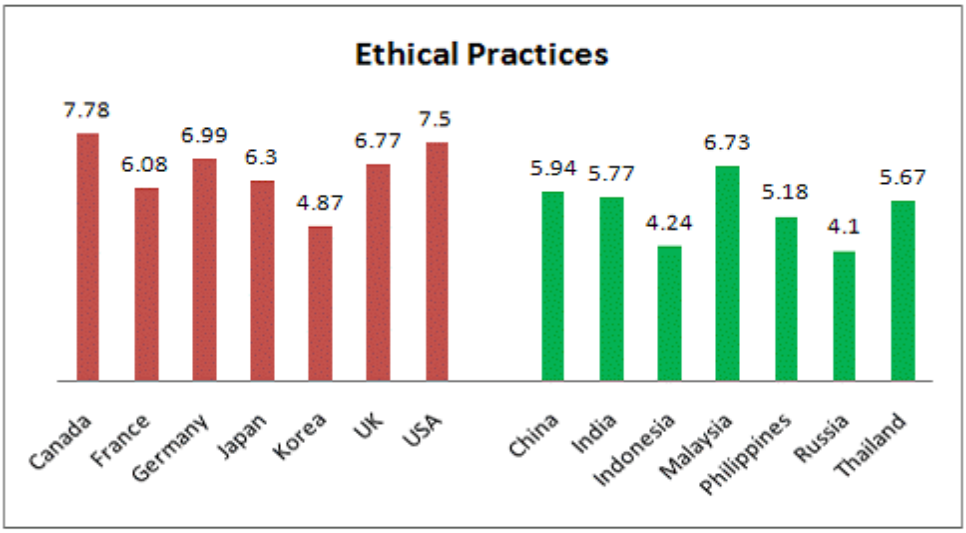
[Figure 12-22] Knowledge Transfer



The higher it is, the more highly developed knowledge transfer is between companies and universities.

The developed countries have higher knowledge transfer than the developing countries. Malaysia has higher knowledge transfer than some OECD countries.

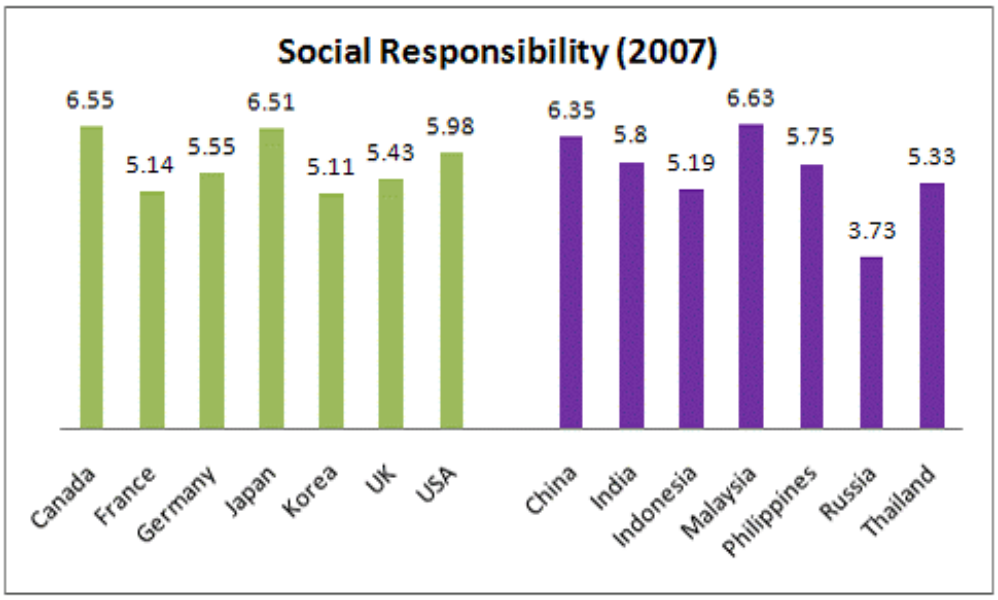
[Figure 12-23] Ethical Practices



The higher it is, the more ethical practices are implemented in companies.

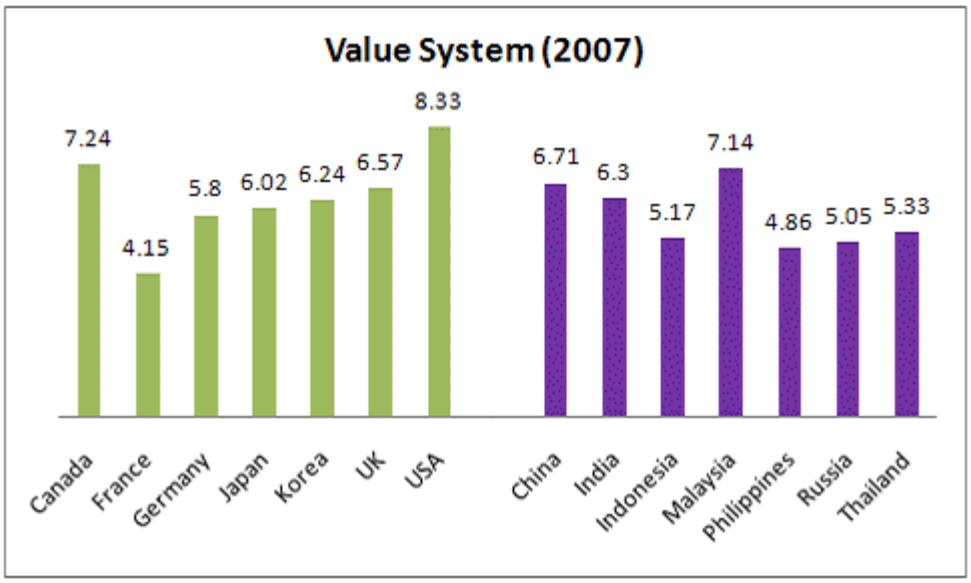
The developed countries have higher ethical practices than the developing countries. Malaysia has higher ethical practices than some OECD countries.

[Figure 12-24] Social Responsibility



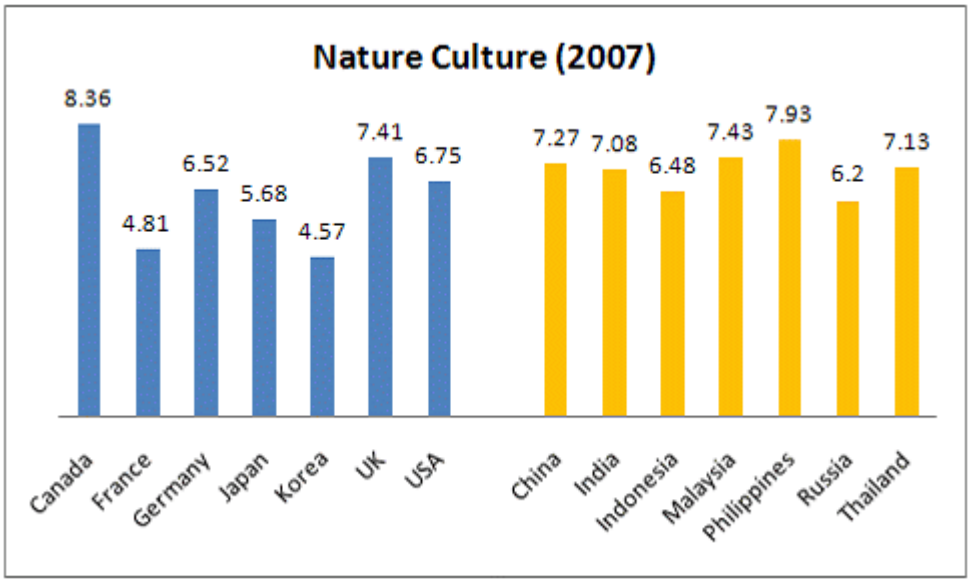
Both have high SC, except Russia.

[Figure 12-25] Value System



The developed countries have higher value system than the developing countries. France is the lowest among all.

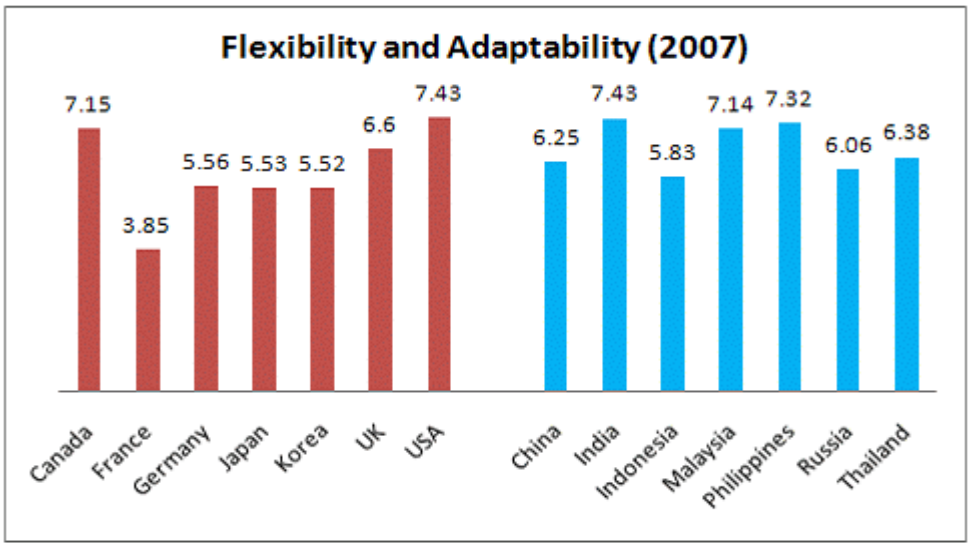
[Figure 12-26] Cultural tendency to open to foreign ideas



The higher it is, the more open to foreign ideas the national culture is.

There are no significant differences. France and Korea are lower than the developing countries.

[Figure 12-27] Flexibility and Adaptability



There are no significant differences. France is the lowest among all.

<Table 12-4> Analysis of Outputs

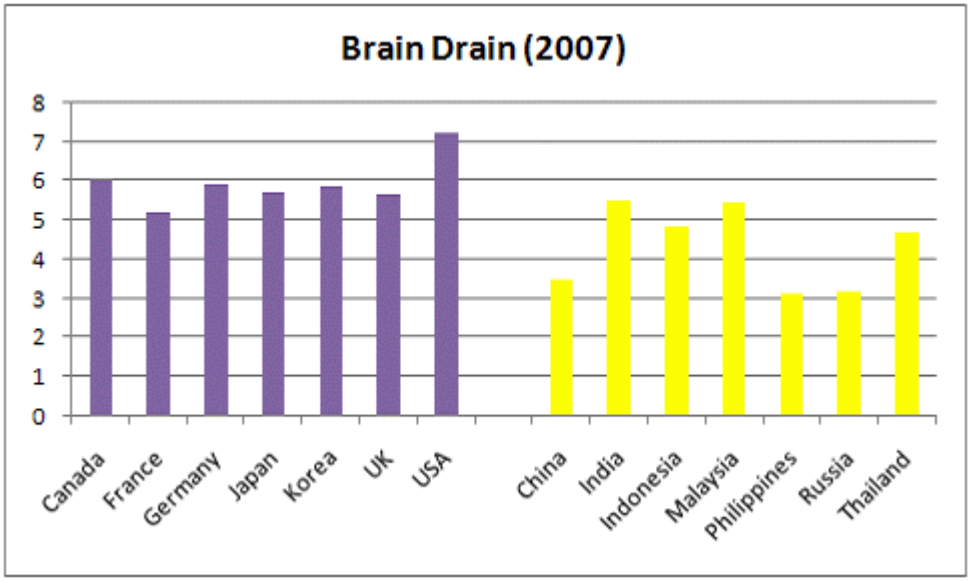
	Developing Countries	**Developed Countries**
Math	lower scores	higher scores
Skilled labor	Low for China, Thailand & Indonesia	Generally higher, except UK
Customer satisfaction	Malaysia, India, Thailand & China: high	Higher except France & UK
Entrepreneurship (similar)	Indonesia & Philippines: low	Japan, Korea & UK: low
Patents	China & Russia higher than France, Germany UK & Canada	Japan, USA & Korea high
Knowledge transfer	Lower	higher
Ethical practices	Low except Malaysia	High except Korea
Corporate Social responsibility	High except Russia	High
Value	Low except Malaysia, China, India	High except France
National culture to openness	high	High except France, Japan & Korea
Flexibility & adaptability	high	High except France

The significant difference between developing and developed countries lies in the areas of academic performance (math and science), availability of skilled labor, customer satisfaction

and knowledge transfer. The developed countries had higher test scores in knowledge transfer than the developing countries. The availability of skilled labor and customer satisfaction are generally higher for developed countries than for the developing countries.

5) Feedback

[Figure 12-28] Brain Drain



HRD policy evaluation is a very weak area for the developing countries.

The policy evaluation for HRD is a part of a feedback system. As there is no data available for the policy effectiveness, brain drain (well-educated and skilled people) was used. The developing countries tend to have less brain drain than the developed countries.

<Table 12-5> Analysis of Feedback

	Developing Countries	Developed countries
Brain drain	lower	Higher

The higher it is, the less the brain drain (well-educated and skilled people) hinders competitiveness in the economy.

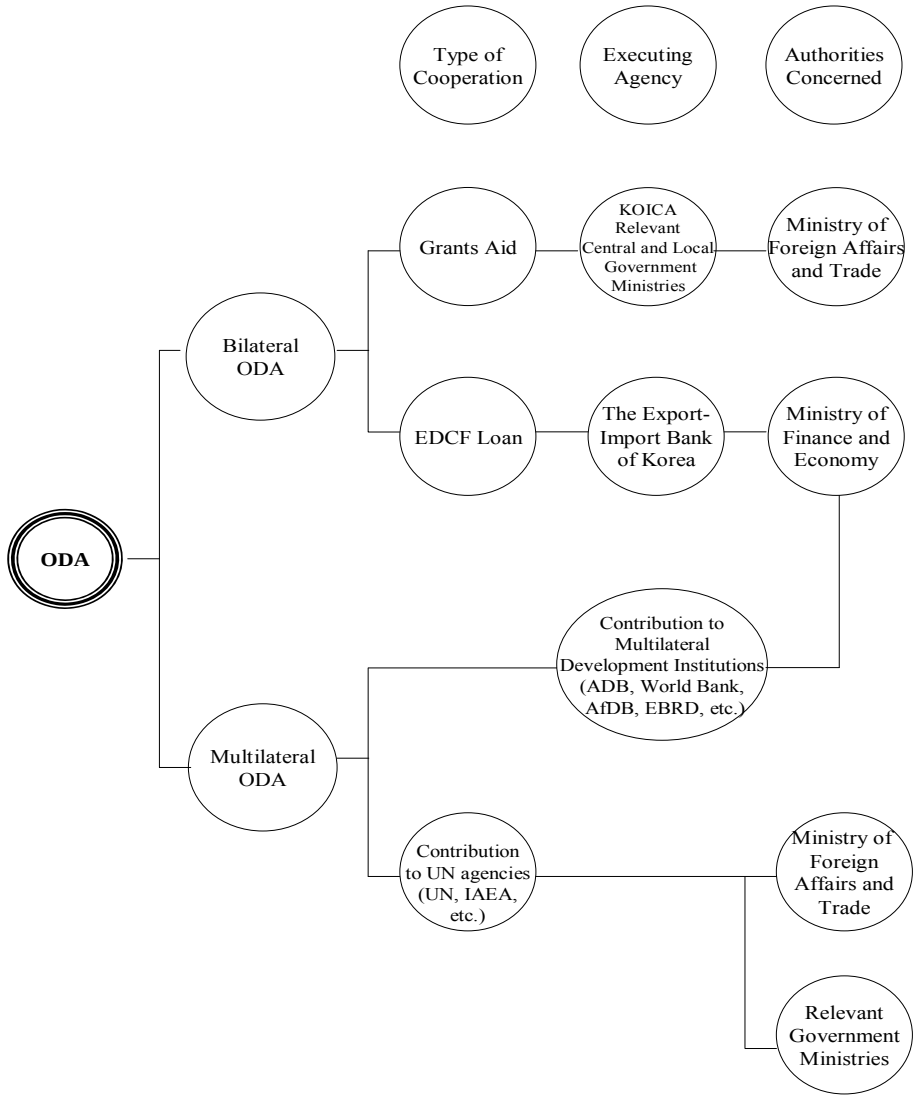
Developing countries have higher brain drain than OECD countries.

Ⅲ. Korea's Current Role in Bridging the Gap Between Advanced and Developing Countries regarding HRD

1. Korea's ODA Operation System

The analysis was limited to Bilateral ODA, which consists of Grants aid and EDCF Loan.

[Figure 12-29] Korea's ODA Operation System



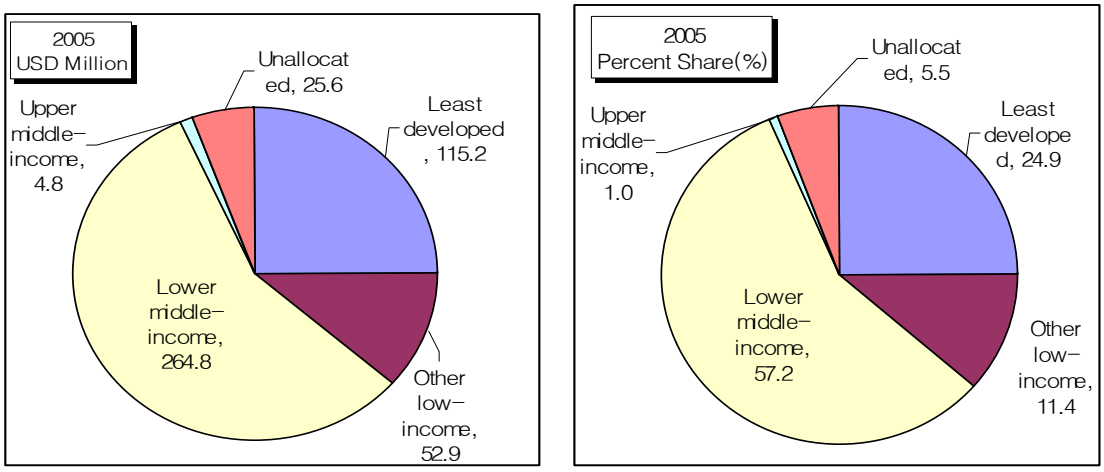
[Table 12-6] Bilateral ODA Allocable; By Region

	USD Million		Percent Share (%)	
	2004	2005	2004	2005
Africa	**28.1**	**39.1**	**8.5**	**8.4**
Sub-Saharan Africa	22.0	33.4	6.6	7.2
North Africa	6.1	5.7	1.8	1.2
Asia	**258.5**	**375.0**	**78.2**	**80.9**
South and Central Asia	63.5	99.1	19.2	21.4
Far East	113.9	97.9	34.4	21.1
Middle East	81.1	177.7	24.5	38.4
America	**14.9**	**19.8**	**4.5**	**4.3**
North and Central America	9.0	8.8	2.7	1.9
South America	5.9	11.0	1.8	2.4
Oceania	**0.4**	**0.5**	**0.1**	**0.1**
Europe	**7.0**	**3.3**	**2.1**	**0.7**
Unallocated	**21.8**	**25.6**	**6.6**	**5.5**
Bilateral ODA [Total]	**330.8**	**463.3**	**100.0**	**100.0**

The Asian countries took a major part (81%) in bilateral ODA, followed by Africa (8.4%) and America (4.3%).

[Table 12-7] Bilateral ODA Allocable; By Income

	USD Million		Percent Share (%)	
	2004	2005	2004	2005
Least developed	86.1	115.2	26.0	24.9
Other low-income	52.2	52.9	15.8	11.4
Lower middle-income	165.3	264.8	50.0	57.2
Upper middle-income	5.2	4.8	1.6	1.0
High-income	0.2	0.0	0.1	0.0
Unallocated	21.8	25.6	6.6	5.5
Bilateral ODA [Total]	**330.8**	**463.3**	**100.0**	**100.0**



The developing countries of lower middle-income had 57%, followed by least developed countries (25%) and other low-income countries (11.4%).

[Table 12-7] Bilateral ODA Allocable; By Sector

	USD Million		Percent Share (%)	
	2004	2005	2004	2005
Bilateral ODA [Total]	**483.45**	**657.8**	**100**	**100**
SOCIAL INFRASTRUCTURE & SERVICES	**314.32**	**398.00**	**65.02**	**60.50**
Education	74.13	50.17	15.33	7.63
Health	55.07	89.64	11.39	13.63
Population Programmes	0.07	0.06	0.01	0.01
Water Supply & Sanitation	78.31	101.56	16.20	15.44
Government & Civil Society	76.02	72.30	15.72	10.99
Other Social Infrastructure & Service	30.72	84.25	6.35	12.81
ECONOMIC INFRASTRUCTURE & SERVICES	**113.12**	**138.12**	**23.40**	**21.00**
Transport & Storage	58.41	82.92	12.08	12.61
Communications	47.76	51.64	9.88	7.85
Energy	5.75	3.25	1.19	0.49
Banking & Financial Services	0.23	0.16	0.05	0.02
Business & Other Services	0.97	0.15	0.20	0.02
PRODUCTION SECTORS	**18.80**	**50.25**	**3.89**	**7.64**
Agriculture, Forestry, Fishing	12.35	41.29	2.55	6.28
Industry, Mining, Construction	5.54	8.22	1.15	1.25
Trade & Tourism	0.90	0.74	0.19	0.11

Out of Bilateral ODA(Total), Social infrastructure services & services took 60.50%. Education declined from $74.13 million in 2004 (15.33%) to $50.17 million in 2005. (7.63%)

Ⅳ. Policy Suggestions for Bridging Roles

1. Suggestions for the environmental analysis

The analysis of environment shows that there are significant differences between developing and developed countries in educational, social and political environments. In sum, the developing countries are featured by high illiteracy, unprotected personal security and private property and unstable politics.

Investment in basic education is critical for developing countries like China, India and Sri Lanka, where 95% of the children can get the level of 6th grader in elementary education. Such being the case, there are more rooms for vocational trainees to develop their skill, knowledge and attitude. In Malaysia, it is also important to raise the quality of the vocational training and increase quantity and quality of secondary education.

Personal and private property in Indonesia and Philippines, and Russia are serious impediments to the development. It is suggested for these countries to establish national security infrastructure to solve the most serious security problem so that more foreign investments can be invited and multiple industries can boom. ODA for government and civil society can be utilized for stabilizing the politics in developing countries.

2. Suggestions for the input analysis

There are more inputs in the developed countries than the developing countries. Developed countries had much more computers per capita and much higher total expenditure on R&D and much higher public education costs than developing countries. The ODA for education and human resource development needs to be increased.

In the same vein, the system that selects and develops the best qualified teacher needs to be established. Besides, provision of good programs needs to be based on not only needs and but also vision.

3. Suggestions for process analysis

The analysis of process shows that employee training and motivation (i.e. knowledge, skill and attitude) are strong for developed countries, while those are very weak for developing countries. While there are little differences in working hours and labor relations, worker motivation and employee training are clearly lower for the developing countries than for the developed countries.

The employee training is essential for the economic development of developing countries. The vocational ethics and value, work norms and attitude need to be emphasized. A model case for such a training could be the spirit of Saemaeul(or New Village) Movement in the 1970s in Korea, of which the potential target audience would be the government officers in a number of developing countries.

4. Suggestions for output analysis

The significant difference between developing and developed countries lies in the areas of academic performance (math and science), availability of skilled labor, customer satisfaction and knowledge transfer. The developed countries had higher test scores and knowledge transfer than the developing countries. Further, knowledge (including information) is monopolized in developing countries, while it is well transmitted in developed countries. The availability of skilled labor and customer satisfaction are generally higher for developed countries than for the developing countries.

As shown in R&D costs, there is little research function of HRD in the developing countries. It is strongly encouraged for the government to strengthen a comprehensive research function related with vocational training and human resource development. In so doing, skilled labor,

customer satisfaction and knowledge transfer are expected to be increased.

5. Suggestions for feedback analysis

The policy evaluation for HRD is a part of a feedback system. As there is no data available for the policy effectiveness, brain drain(well-educated and skilled people) was used. The developing countries tend to have more brain drain than the developed countries. It clearly plays a role of barrier for developing human resources in developing countries.

Summing up, we suggest the following points as a way to establish a bridging role in a positive way.

1. To develop a model of bilateral ODA or international collaboration of Education and Human Resource Development based on a system approach. In this way, the rational method of determining bilateral ODA may be developed. Through this process, the amount of ODA may be determined systematically by region, income level of developing countries, and sectors.

2. The collaboration between countries needs to be developed based on the model. Some developing countries need more ODA in the areas of inputs, others in the areas of outputs and so on.

3. To develop the needs of a particular country based on a system approach. A detailed analysis of a particular country based on a system approach makes it easy to develop the needs, which the developed countries can satisfy in a customized way.

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- 발 행 처	한국직업능력개발원 135-949, 서울특별시 강남구 청담 2 동 15-1 홈페이지: http://www.krivet.re.kr 전 화: (02)3485-5000, 5100 팩 스: (02)3485-5200
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